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

Environmental Assessment

Clark Fork Face Forest
Health and Fuels Reduction

DOI-BLM-MT-B010-2022-0020-EA
April 17, 2024

Location: In the Garnet Mountains; Clark Fork River drainage from Bonner, MT to Drummond, MT. Including Wallace Creek, Bear Gulch, Rattler Gulch and vicinity.

T.10N R.14W secs 29, 32 – 35.
T.11N R.12 W secs 6-7.
T.11N R.13W secs 2,4-7, 9-10, 12, 14, 18, 22.
T.11N R.14W secs 3, 6, 14, 20.
T.11N R.15W sec 15.
T.11N R.17W secs 2, 12.
T.12N R.13W secs 4, 5, 7 – 9, 17, 18, 20, 22, 26, 28, 32, 34.
T.12N R.14W secs 2 – 6, 9 – 15, 18, 20, 22, 24, 27 – 29, 33, 34.
T.12N R.15W secs 1, 2, 10 – 15, 18, 24, 30.
T.12N R.16W secs 17 – 18.
T.12N R.18W sec 1.

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1 Introduction

Summary of Proposed Project

The Bureau of Land Management's Missoula Field Office (BLM) is proposing forest restoration and fuels reduction treatments on BLM managed lands along and north of the Clark Fork River corridor, between Bonner and Drummond, MT. The Clark Fork Face planning area extends approximately 5 – 50 miles east of Missoula, MT in the Clark Fork River sub-basin in west central Montana. The planning area totals 247,191 acres approximately, with a mix of ownerships including BLM; US Forest Service (USFS); The Nature Conservancy (TNC); Montana Department of Natural Resources and Conservation (DNRC); the University of Montana (UM); private ownership and others. For this project, forest restoration and fuels reduction treatments are proposed on BLM managed lands only. Table 1 and Figure 1 display the mix of land ownership in the planning area. See Appendix D, Map 9.0 for a planning area location and land ownership map.

Table 1: Land ownership in the Clark Fork Face planning area.

Ownership	Acres	% of Total
BLM	23,666	10%
Forest Service	2,361	1%
Private	119,342	48%
State-DNRC	51,930	21%
State-FWP	125	0%
State-U of M	1303	1%
Stimson Lumber Company	19,222	8%
The Nature Conservancy	29,242	12%
Grand Total	**247,191**	100%

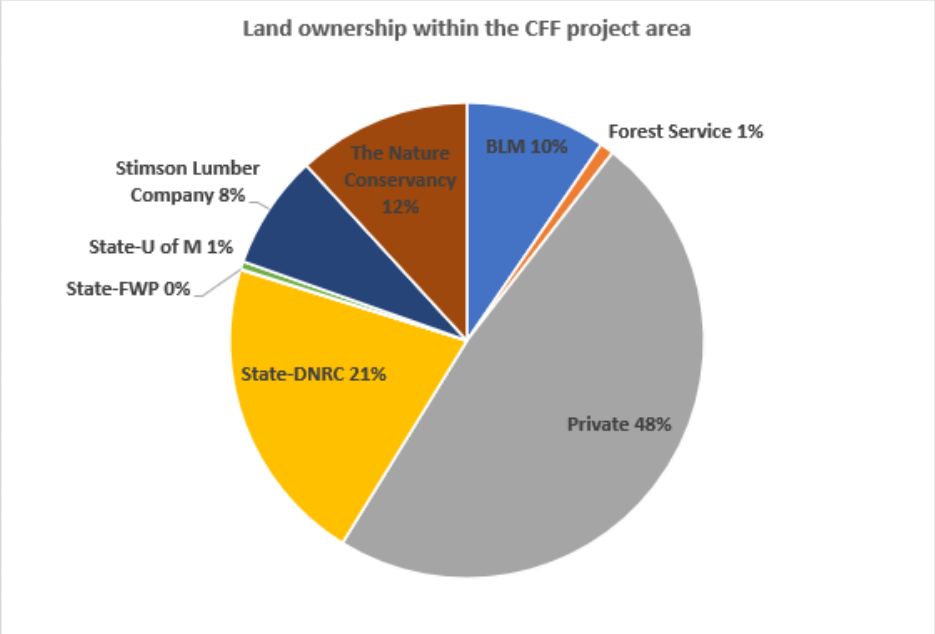


Figure 1: Land ownership within the planning area expressed as percent of the total.

The BLM seeks to reduce the risk of wildfire and manage forest habitats using an ecosystem management approach within the planning area. The forest's deviation from the natural range of variability and expansion of the wildland urban interface within the planning area necessitate BLM's proposal to implement forest restoration and fuels reduction treatments on BLM managed land.

Managing forest ecosystems within their natural range of variability will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994).

Natural range of variability (NRV) is a spectrum of ecological vegetative states, and the spatial and temporal variation in these states. Modeling was used to develop a quantified estimate of the NRV for the planning area and knowledge of historical conditions helped corroborate the model results. Historical conditions were established based on the publication "Historical Vegetation of Montana" (Losensky 1997). Current conditions were determined using data collected within the planning area by BLM personnel conducting forest inventory plots as well as photo interpretation.

Decades of fire suppression and past management activities in the planning area have resulted in current conditions that deviate from the NRV when measured by tree species composition, density and age class distribution. This deviation from NRV results in a high susceptibility to forest insect and disease outbreaks, high fuel loading and high potential for stand replacing wildfire.

Coupled with the unhealthy state of the BLM forested stands, the private land in the planning area has experienced subdivision and rural development in the past decades. What was once a

large industrial forest ownership, is now overwhelmingly (48% of the planning area) small, nonindustrial private landowners who are constructing homes and buildings in the forest (see table 1). This subdivision and rural development have effectively transitioned the entire planning area to Wildland-Urban Interface (WUI) when measured as a proximity to structures (See Appendix D, maps 9.9 and 9.10). Because of this shift in ownership and use of the private land, the BLM's forested parcels represent an increased risk from wildfire to the private structures and improvements and to the safety of the residents and firefighters. It is these twin realities: the deviation from NRV and the expansion of the WUI that necessitate this project.

Purpose and Need

The general purpose and need for action is to implement the directives of the 2021 Missoula Field Office Resource Management Plan (RMP) (USDI-BLM 2021) to reduce the risk of wildfire and manage forest habitats using an ecosystem management approach. The purpose of the action is also to implement the BLM's policy as established by The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, which establishes the agency's multiple-use and sustained yield mandate to serve present and future generations. Additionally, the purpose and need for the Proposed Action is to implement Executive Order 14072 of April 22, 2022 which directs the BLM through the Secretary of the Interior to manage forests on Federal lands, which include many mature and old-growth forests, to promote their continued health and resilience; retain and enhance carbon storage; conserve biodiversity; mitigate the risk of wildfires; enhance climate resilience; enable subsistence and cultural uses; provide outdoor recreational opportunities; and promote sustainable local economic development.

The specific purpose and need for action in this Clark Fork Face area stems from the need to:

1. Protect life, property and firefighter safety in and near the wildland-urban interface and promote resilience to wildfire by reducing forest fuel loading and breaking up homogeneous stand conditions.
2. Restore healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV.
3. Maintain and enhance native and sensitive plant communities; this includes maintaining and enhancing limber pine (*Pinus flexilis)* populations where present.
4. Improve ecological health by increasing resistance and resilience to forest insect and disease outbreaks.
5. Provide local and regional economic benefits through harvest of forest products and capturing the value of dead and dying timber while it remains salvageable.

The Clark Fork Face area is in need of improving forest health conditions and pursue midpoint NRV for an extensive area within and near WUI. As stated above, decades of fire suppression and past management activities in the planning area have resulted in current conditions that are deviated from the NRV when measured by tree species composition, density and age class distribution. This departure from midpoint NRV will be described using two comparisons: current cover type will illustrate the deviation in species composition, while primary structural component will illustrate the deviation in terms of tree density and age class distribution (see Appendix G. for detailed comparisons of current condition versus desired condition). These deviations from midpoint NRV will be described in per habitat type group across the planning area.

Habitat Type Groups (HTGs) are groupings of Habitat Types (Pfister et al. 1997) as established in the 2021 Missoula Field Office Resource Management Plan (RMP) (USDI-BLM 2021). Habitat types are an aggregation of ecological sites of similar biophysical environments (such as climate, aspect, and soil characteristics) that produce plant communities of similar composition, structure, and function.

The HTG is named for the vegetation communities that would develop over time, given no major natural or human disturbances. This represents the climax plant community—which is to say that once a HTG's dominate vegetation matches its group name, the site has climaxed, and natural succession has stopped. It is in this climax condition that the vegetation on a site stagnates and will remain in that state until disturbance in the form of wildfire, insect and disease outbreak or human intervention can restart the natural succession.

HTGs found in the planning area are displayed in the following tables and graphs, by acre and percent of total for all ownerships as well as BLM managed lands only.

Table 2: Habitat Type Groups within the planning area on all ownerships.

CFF Planning Area by HTG - all ownerships		
HTG Labels	Sum of Acres	% of total
HTG-1 Warm Douglas-fir	40,964	17%
HTG-2 Cool Douglas-fir	128,472	52%
HTG-3 Moist Douglas-fir	2,368	1%
HTG-4 Moist subalpine fir	18,155	7%
HTG-5 Cold subalpine fir	726	0%
HTG-6 Very cold subalpine fir	3,503	1%
HTG-9 non-forested /grassland	28,676	12%
Not Applicable / rock	62	0%
Ag. / Urban/ Water	24,267	10%
Grand Total	**247,191**	**100%**

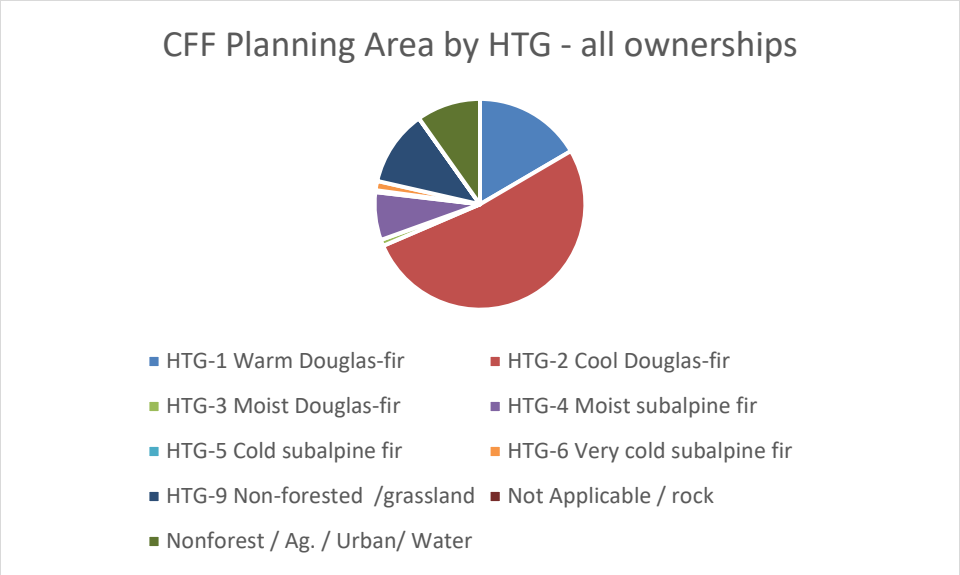


Figure 2: Habitat Type Groups within the planning area on all ownerships.

Table 3: Habitat Type Groups within the planning area on BLM managed lands only.

CFF Planning Area by HTG BLM ONLY		
HTG Labels	acres	% of total
HTG-1 Warm Douglas-fir	6,085	26%
HTG-2 Cool Douglas-fir	13,191	56%
HTG-3 Moist Douglas-fir	230	1%
HTG-4 Moist subalpine fir	2,588	11%
HTG-5 Cold subalpine fir	80	0%
HTG-6 Very cold subalpine fir	355	2%
HTG-9 non-forested /grassland	1,056	4%
Not Applicable / rock	57	0%
Ag. / Urban/ Water	25	0%
Grand Total	23,666	100%

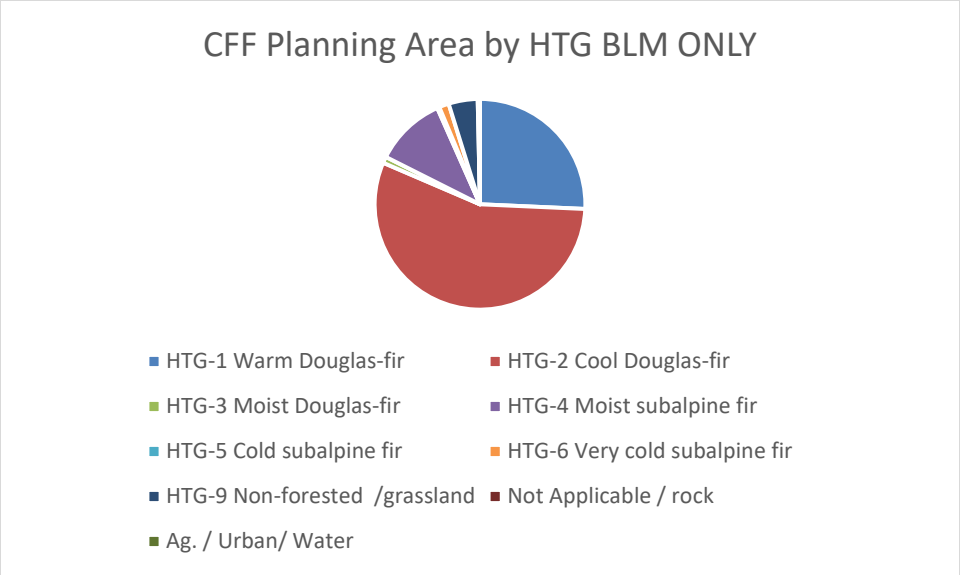


Figure 3: Habitat Type Groups within the planning area on BLM managed lands only.

As illustrated in tables and figures 2 and 3 above, across the planning area on all ownerships as well as on BLM managed lands, HTG-2 Cool Douglas-fir occupies the most area: 52% of all ownerships and 56% of BLM managed lands.

As described above, once a HTG's current condition matches the vegetation type it is named for, the site has reached a climax condition, and natural succession has stalled until a disturbance occurs. Across the planning area the Douglas-fir groups (HTG-1 – HTG-3) have shifted away from fire tolerant, open stands dominated by large diameter widely spaced early-seral tree species such as ponderosa pine and western larch toward less fire tolerant stands dominated by smaller diameter, more tightly spaced shade tolerant species such as Douglas-fir. In the subalpine fir groups (HTG-4 – HTG-6) this shift is characterized by homogeneous, densely stocked even-aged stands across the landscape, often dominated by lodgepole pine. These stands are lacking age and size class diversity across the landscape, which would vary over space and time in an unaltered system (midpoint NRV). Due to the lack of moderate to high intensity fire over time these subalpine fir HTGs are also experiencing heavy ingrowth of shade tolerant species such as lodgepole pine and subalpine fir. These stands also exhibit a high accumulation of dead standing and downed trees resulting from mountain pine beetle induced mortality in the lodgepole pine (Lestina et al, 2019), and high levels of defoliation in the firs from the Western spruce budworm (Haavik, L. and Costanza, K., 2020). The non-forested grassland sites (HTG-9) have also been subject to fire exclusion and other management, and exhibit an altered species composition, namely conifer encroachment.

The departure from the midpoint of the NRV has resulted in the Clark Fork Face area forest conditions that are highly susceptible to and experiencing forest insect and disease outbreaks as documented by the USDA Forest Health and Protection (FHP) entomologists and pathologists (Haavik, L. and Costanza, K., 2020). Current conditions predispose these forests to naturally uncharacteristic wildfire, exacerbated by continuous crowns and dense ladder fuels in Douglas-

fir habitat types and continuous patches of even aged stands in subalpine fire habitat types across the landscape (BLM forest inventory, 2014).

FHP aerial detection has found past insect and disease outbreaks in the planning area (2000 – 2015) include low to moderate defoliation from Western Spruce Budworm (WSB) throughout most of the planning area, with isolated areas of high severity (Haavik, L. and Costanza, K., 2020). Douglas-fir beetle (DFB) is currently active in the planning area, though severity of impact is difficult to determine through aerial survey due to the WSB activity. In addition to those insects currently active, the area was also heavily impacted by Mountain Pine Beetle (MPB) during the outbreak of 1999 – 2015, which effected over 9,000,000 acres in the region and over 2,000,000 of those acres severely (Lestina et al, 2019). In that event, the MPB population grew to epidemic levels and impacted many tree species including lodgepole pine, ponderosa pine and limber pine within the planning area, as well as western white pine and whitebark pine outside the planning area.

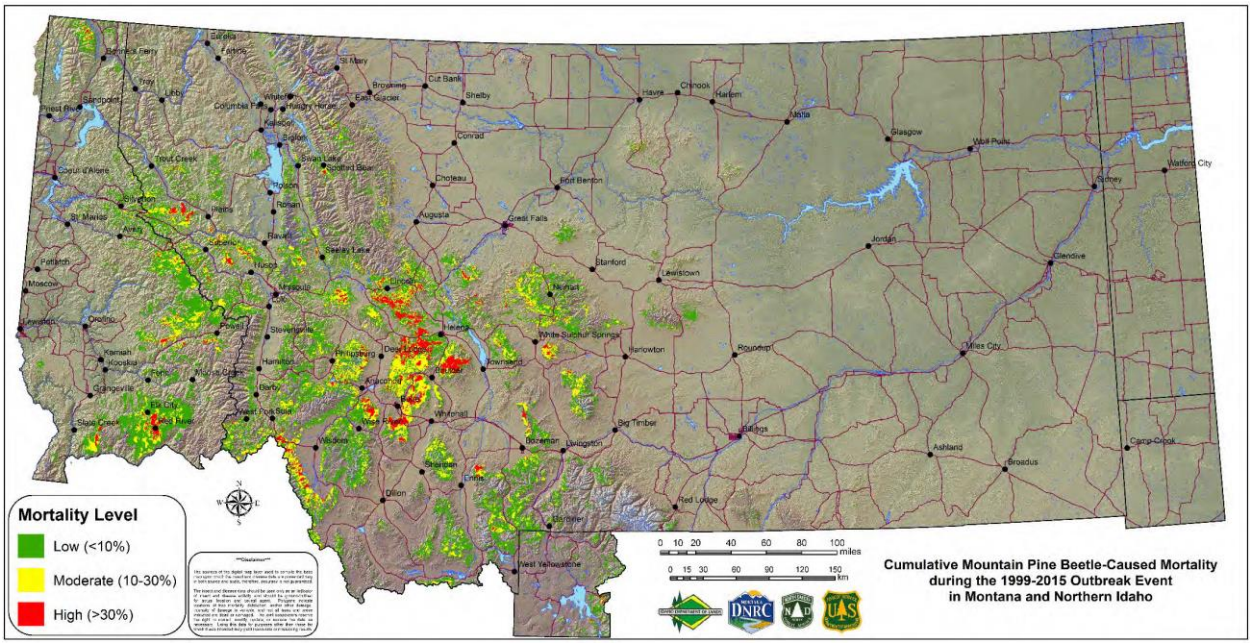


Figure 4: Cumulative Mountain Pine Beetle-Caused Mortality during the 1999 - 2015 Outbreak Event in Montana and Northern Idaho (Lestina et al, 2019).

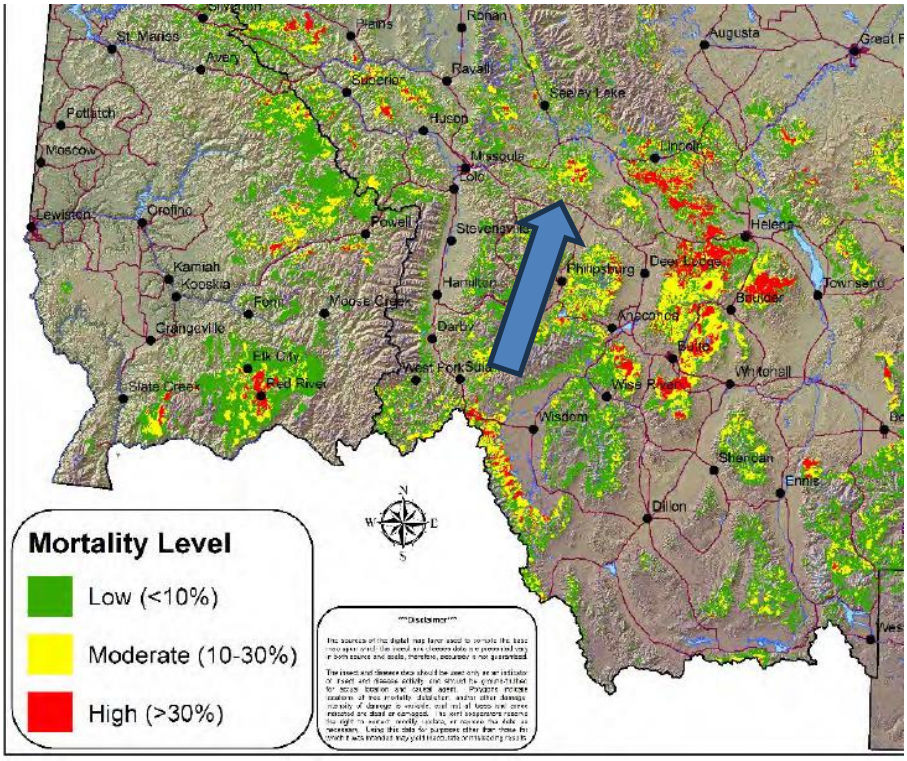


Figure 5: Same map as Figure 4 above, zoomed to SW Montana with blue arrow indicating the CFF planning area (Lestina et al, 2019).

These current and past insect and disease outbreaks in the planning area have resulted in increased tree mortality and high proportion of dead standing and downed trees, creating particularly large fuel loads. These unhealthy forest conditions and high fuel loadings on BLM lands pose a risk to the extensive private tracts and resources interspersed with federal land in the planning area, as well as a significant forest health concern.

A detailed comparison of current conditions versus desired condition (midpoint NRV) per HTG is located in Appendix G. The departure from NRV is described using two comparisons: current cover type will illustrate the deviation in species composition, while primary structural component will illustrate the deviation in terms of tree density and age class distribution. Section 3.2.3 describes in detail how the proposed action would achieve the desired condition and Section 3.2.2 describes the likely consequences of no action. By shifting the forested stands back towards the midpoint NRV the project will improve forest health by reducing competition for resources, reducing instances of insect and disease outbreaks by increasing residual tree vigor, and reducing wildfire risk by opening the crowns and reducing hazardous fuel loading.

Decision to be Made.

The BLM will decide whether to implement the Proposed Action or an alternative to the proposed action. The BLM may decide to implement either all or a subset of the actions described in the Proposed Action. If there is a decision to move forward with some or all of these

activities the BLM will also decide the extent, location, timing, and project design features associated with each activity.

Land Use Plan Conformance

The Proposed Action is in conformance with The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, and Executive Order 14072 of April 22, 2022. Further, the Proposed Action is in conformance with the 2021 Missoula FO RMP (USDI-BLM 2021), and implements the goals, objectives and management actions of the RMP, specifically as listed in the following sections:

II.2.10 VEGETATION: FOREST VEG AND SPECIAL STATUS PLANT SPECIES

II.2.12 WILDLIFE HABITAT AND SPECIAL STATUS WILDLIFE SPECIES

II.2.13 WILDLAND FIRE MANAGEMENT.

II.2.14 FOREST PRODUCTS

Goals

FV-G-2. Restore or maintain forests within the natural range of variability (NRV) for each habitat type group in terms of species composition, structure, density, and disturbance patterns. Emulate disturbance patterns in terms of intensity, frequency, and scale.

FV-G-4. Create, maintain, and restore vegetative communities that are resilient to changing disturbance regimes (e.g., drought, wildfire, insects, and pathogens), allowing for shifting of plant communities, structure, and ages across landscapes.

WL-G-4. Manage long-term goals for NRV by providing diverse and well-distributed plant communities across the landscape by implementing principles of ecological forestry; while also ensuring there is habitat for native wildlife in sufficient quantity and quality to enhance biological diversity and conservation, and to sustain ecological, economic, and social values.

WL-G-5. Manage to provide diverse and well-distributed plant communities across the landscape. Implement sound ecological principles, focusing on ecological forestry, when designing vegetation treatments, to emulate natural disturbance and plant community development.

WF-G-1. Emphasize firefighter and public safety as the first priority in every wildland fire and fuels management activity.

WF-G-2. Restore and maintain desired ecological conditions consistent with appropriate fire regimes.

WF-G-3. Manage wildland fire and fuels to reduce the risk of uncharacteristic wildland fires, as well as to protect, maintain, and enhance resources.

WF-G-7. Protect life and property by treating hazardous fuels on BLM-managed lands.

FP-G-1. Manage forest resources to provide a sustainable flow of timber to support local economies through timber harvest.

FP-G-2. Manage forested lands for multiple uses including commercial timber and other forest products commodity production, wildland fire resiliency, terrestrial and aquatic wildlife habitat, recreational uses and cultural resources.

FP-G-3. Collaborate with all land management partners (federal, state, private, and tribal) to increase effectiveness and amount of lands treated to promote forest health.

RF-G-1. Manage facilities, including roads and trails, to provide for public access or administrative needs, while maintaining or protecting resource values and in coordination with other federal agencies, state and local governments, and private landowners.

Objectives

FV-OBJ-1. Increase the number of acres in each habitat type group that are within the mid-range natural range of variability for that habitat type group to restore ecological conditions consistent with suitable disturbance regimes.

FV-OBJ-2. Increase acres of treatment on the landscape where appropriate through management opportunities (mechanical, as well as prescribed fire) to emulate or restore natural disturbance patterns.

FV-OBJ-3. Treat approximately 15,000 acres per decade, with a goal of moving 10 percent per decade of forest vegetation that is currently near the lower or upper bounds of the natural range of variability (NRV) toward the midrange of NRV by using mechanical means or prescribed fire, or both.

FV-OBJ-5. Manage vegetation structure, density, species composition, patch size, pattern, and distribution to reduce impacts of wildland fires and forest insect outbreaks that are outside the NRV.

FV-OBJ-8. Promote development of fire-resilient forests for public safety, wildland firefighter safety, and to reduce the risk of catastrophic wildland fire. Work collaboratively with all land management partners to manage public, private, and tribal lands. Apply prescribed burns and mechanical or hand fuels treatments to reduce the potential for uncharacteristic wildfires. Apply maintenance treatments at appropriate levels to retain fire resilient conditions.

WL-OBJ-10. Retain dead and down woody material in amounts consistent with the NRV and habitat type groups, to the extent compatible with reforestation objectives, fire hazard reduction standards, and public health and safety.

WL-OBJ-13. Develop vegetation management projects in Canada lynx habitat within lynx analysis units, and lynx critical habitat, to enhance and create dense early stand

initiation forage habitat and dense mature multistory foraging and denning habitat, in a mosaic pattern across the landscape over space and time.

WL-OBJ-16. Create a mosaic of early stand initiation and mature multistory habitat within each lynx analysis unit and lynx critical habitat. The BLM would consider thinning methods, within lynx habitat and lynx critical habitat, in early stand initiation structure if treatments would result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx.

WL-OBJ-17. Fuels treatment projects within the within the 1-mile wildland urban interface (WUI) buffer (approximately 7,648 acres) and Fire Management Zone I not meeting lynx conservation measures (due to protecting life, increasing the safety of firefighters, and protecting property, improvements, and infrastructure) may occur.

WF-OBJ-1. Use FMZs and WUI to guide and prioritize wildland fire and fuels management activities. FMZ1 and the WUI would be the highest priority, while FMZ3 the lowest. Treatments include wildland fire, mechanical, manual, biological, and chemical.

WF-OBJ-3. Within the 1-mile wild and urban interface (WUI) buffer (approximately 7,648 acres) and Fire Management Zone 1, design and implement fuels treatments to protect life, increase the safety of firefighters, and protect property, improvements, and infrastructure. These treatments will be the highest priority on BLM administered lands and take precedence over other resources.

FP-OBJ-1. Manage forest resources to provide a sustainable flow of timber to support local economies through timber harvest.

FP-OBJ-4. Build new permanent roads, if necessary, to facilitate long-term management of areas to meet forest resource objectives, and close temporary roads upon completion of project implementation. Replacement, maintenance, and decommissioning of existing roads to meet transportation planning and management objectives could also occur during forest product management projects if deemed appropriate at the project level.

RF-OBJ-1. Provide and maintain a road transportation system that serves resource management needs (administrative/commercial) and public use needs (recreational/domestic) for BLM-managed lands while mitigating impacts to resources.

Management Actions and Allowable Uses

FV-MA-1. Design treatments to emulate disturbance and move conditions toward stand density, species composition and structure, which are within NRV for all habitat types.

FV-MA-2. Consider vegetation management treatments in warm dry habitat type groups a moderate to high priority based upon departure from NRV, and treatments in cool moist and cold habitat type groups a moderate to low priority based upon departure from NRV.

FV-MA-3. Maintain and create mature forest conditions through active treatment and

restoration activities. Design actions to develop stand structures that are relatively complex with variable tree densities, diverse understory composition, and abundant snags and downed logs. Where deficient on the landscape, create snags and down woody material for wildlife habitat.

FV-MA-4. Maintain adequate access for management activities and treatments including permanent or temporary roads as necessary. Determine road locations based on topography, drainage, soil type, and other natural features to minimize erosion. Rehabilitate skid trails and temporary roads by appropriate methods that disperse runoff, reduce erosion, and promote revegetation as needed.

FV-MA-5. Apply site-specific treatments to emulate historic disturbance patterns within the historic range of variability in terms of intensity, frequency, and scale.

FV-MA-9. In the wildland-urban interface (WUI), prioritize fuels reduction to address site-specific conditions and objectives for public safety rather than moving vegetation toward NRV or managing for any other objectives.

FV-MA-10. Prioritize stands with characteristics indicating a high risk of developing epidemic levels of forest insects and/or disease for treatments to reduce risk across all habitat type groups.

FV-MA-11. Manage slash to be conducive to revegetation and advantageous to the passage of wildlife. Dispose of slash when necessary to reduce fire hazard in the WUI or to accomplish other resource objectives.

FV-MA-14. Maintain or, where practical, enhance site productivity on lands available for harvest: (a) minimize insect and disease losses with harvesting and management practices; (b) precommercial thin stands to maximize growth on residual trees; and (c) participate in tree improvement cooperatives and use genetically improved seedlings in reforestation of these lands.

FV-MA-17. Apply project-level design features as appropriate (Appendix P).

WL-MA-9. Create or maintain a mosaic of early, mid and late-succession forest conditions across the landscape consistent with natural disturbance regimes to create and maintain desired forest conditions for priority wildlife species.

WF-MA-1. In general, manage wildfires according to Fire Management Zone classification. Although the FMZ determination does not dictate exactly how every wildfire is to be managed, it will be used to guide and prioritize wildfire response and fuels management. Taking actions to limit fire growth is always an option for any wildfire in any FMZ. The strategy for any wildfire depends on many factors including the FMZ, current vegetation conditions, time of year, condition of fuels, risk management, resource availability, safety, protection agency, geographical area and national wildland fire activity, and smoke impacts.

A. FMZ1: High values at risk, or areas at high risk of catastrophic fire due to current vegetation conditions, where an unplanned wildland fire is likely to cause negative effects. These lands would generally be under a full suppression strategy. These lands are adjacent to and close proximity to the WUI, intermingled with private and state lands, and contain important cultural, recreational, economic, or biological resources. Fuels treatments including mechanical and prescribed fire will play a major role in these areas.

B. FMZ2: Wildland fire is desired to manage ecosystems, but there are constraints to using wildland fire. Constraints are many and vary greatly including current vegetation conditions, time of year, condition of fuels, risk management, resource availability, safety, protection agency, geographical area and national wildland fire activity, and smoke impacts. Prior vegetation treatments will aid in allowing wildland fire to be utilized to manage vegetative communities, and wildland fire is needed to maintain some of these prior vegetation treatments. The full range of fuels treatments including mechanical and prescribed fire on lands in this category will be important to the success of wildland fire management.

WF-MA-5. Coordinate and cooperate with local jurisdictions to prioritize fuels reduction in WUI areas in conjunction with completed community wildfire protection plans.

FP-MA-1. Implement project design features and best management practices to improve habitats for or to minimize effects to wildlife, aquatics, riparian areas, and other resources from forest management activities (Appendix P).

FP-MA-2. Commercial harvest of forest products is typically associated with vegetative restoration to a NRV and would be designed to meet multiple objectives some of which would include forest management, wildlife habitat management, hazardous fuels reduction, hazard tree removal, special status species management, visuals, recreation, and travel management. However, commercial harvest of forest products would be the primary objective of management activities in some instances to meet goals and objectives of supporting local economies.

FP-MA-5. Silvicultural prescriptions would be created and implemented for commercial harvest activities and would be consistent with professionally acceptable methods related to site, species, habitat types, and regeneration methods appropriate in a given area.

FP-MA-9. Montana forestry BMPs would be followed during implementation of commercial timber harvest or special forest product sales activities.

RF-MA-1. Construct new permanent/temporary roads where needed to meet resource management objectives, including major culverts and bridges as necessary, to established BLM engineering design standards.

RF-MA-3. Maintain existing roads to provide access for both resource management and casual use activities to established BLM maintenance standards while providing user safety, protecting water quality and facility investments, and in consideration of other resource issues.

RF-MA-4. Manage for safety along BLM-managed roads including, but not limited to, hazard tree removal.

RF-MA-10. Maintain or improve roads within the RHCAs in a condition that will not contribute sediment to streams that will hinder spawning habitat for fish.

This document has been prepared in conformance with the National Environmental Policy Act (NEPA) of 1969. The Proposed Action presented in this EA is consistent with federal and state legislation pertaining to land management, water and air quality, threatened and endangered species, and antiquities protection.

Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects their actions would have on cultural resources for any endeavor that involves Federal monies, Federal permitting or certification, or Federal lands. Cultural resources are locations of past or current human activity, occupation, or use and include prehistoric or historic archaeological sites, buildings, structures, objects, districts, or other places. Cultural resources can also be natural features including native plant localities that are considered important to a culture, subculture, or community. Traditional Cultural Properties (TCPs) are places associated with the traditional lifeways, cultural practices, or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity. Locations of TCPs are often not known to the BLM but may still be present in the planning area.

As a component of the consultation for this project, the BLM has developed a Programmatic Agreement that has been reviewed by the State Historic Preservation Office (SHPO) (comments received as of May 2023), and the Advisory Council on Historic Preservation (ACHP) (comments received as of Oct. 2023). Additionally, the PA was provided to Tribal Preservation Office for their comment. According to the Programmatic Agreement it has been determined that a phased identification and evaluation of historic properties, determinations of effect, mitigations and consultation will be carried out after issuance of the decision record, but prior to authorizing implementation. All affected areas according to the proposed action will have class III inventories conducted prior to project implementation. Historic / prehistoric / cultural sites and properties would be avoided during implementation. See Appendix F, Section 11.0.5 for Design Features specific to Cultural and Archeological resources.

Section 7 of the Endangered Species Act (ESA; 16 U.S.C. §1536) requires the BLM to ensure that actions they undertake, authorize, or fund are not likely to jeopardize threatened or endangered species (i.e., listed species) or adversely modify designated critical habitat for listed species.

Canada lynx (*Lynx canadensis*) (threatened) grizzly bear (*Ursos arctos horribilis*) (threatened) and North American wolverine (*Gulo gulo luscus*) (threatened) may inhabit the planning area. The 2020 Biological Opinion on the Effects of the Bureau of Land Management, Missoula Field Office Revised Resource Management Plan on Grizzly Bears, Canada Lynx, and Designated Lynx Critical Habitat (USDI-FWS 2020) would be followed. The Canada Lynx Conservation Assessment and Strategy, 3rd edition (Interagency Lynx Biology Team 2013) would be followed. Canada lynx critical habitat is present and Federal Register, Vol 79, No. 177, Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment

would be followed. The Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy (USDI-FWS 2013) and the Grizzly Bear Recovery Plan (USDI-FWS 1993) would be followed.

The proposed action complies with bull trout and habitat management policy found in the 2021 Missoula FO RMP. The RMP guidance is based on compliance with the 2015 Recovery Plan for the Conterminous United State Population of Bull Trout and key support documents Conservation Strategy for Bull Trout on USFS lands in Western Montana (2013) and the Updated Interior Columbia Basin Strategy (2014). Bull trout (threatened) and bull trout designated critical habitat would not be affected due to factors associated with design features (Appendix F, Section 11.0.12) and conservation measures incorporated into the proposed action; as well as the distant proximity and local topography of vegetation treatments and haul routes to occupied bull trout habitat and bull trout designated critical habitat.

Issues Identified for Analysis

Issue 1 – How would the Alternatives impact forest vegetation in the context of wildfire resiliency, forest fuel loading, firefighter safety, NRV and forest vegetation resistance and resilience to forest insects and disease outbreaks?

Issue 2 – How would the Alternatives impact local and regional economies?

Issue 3- How would the Alternatives impact Canada lynx and Canada lynx critical habitat; grizzly bear, wolverine, and their habitats; and the contiguous U.S. wolverine Distinct Population Segment?

Issue 4- How would the Alternatives impact BLM Special Status terrestrial wildlife species and their habitat?

Issue 5 - How would the Alternatives impact big game species and their habitat, specifically winter range, disturbance/displacement, and forage availability?

Issue 6 - How would the Alternatives impact migratory birds and their habitat?

Issues Identified but Eliminated from Further Analysis

The following Issues Identified but Eliminated from Further Analysis have corresponding rationale, or criteria listed. See Appendix F for a full list of Design Features for the Proposed Action, many of which have been developed specifically to address these eliminated issues.

How will harvest and fuel treatment operations impact soil productivity of specific soils requiring protection for ecological health (biological soil crusts)?

Under all alternatives, during the layout phase, all proposed treatment areas would be evaluated for presence of biological crusts prior to implementation. This would be accomplished by identifying likely areas through soil mapping and satellite imagery as well as field reconnaissance. If and when found, biological soil crusts will be protected through exclusion from mechanical and manual treatment areas. This issue is eliminated from detailed analysis because loss of biological soil crusts would be avoided through buffering of soil crust locations

during treatment layout. See Section 11.0.1 of Appendix F: Design Features for the Proposed Action.

How will road construction impact unstable soils?

The sub-alternative would not include any additional road construction. Under the proposed action, areas with proposed road construction that intersect with geologically unstable soils will be rerouted, modified and or shortened to avoid impacting the unstable sites. This would be accomplished by identifying likely areas through soil mapping and satellite imagery as well as field reconnaissance. Proposed road locations would be determined in coordination with soil scientist / hydrologist and geologist. This issue is eliminated from detailed analysis because unstable soils will be identified during layout and avoided during road construction. See Section 11.0.1 of Appendix F: Design Features for the Proposed Action.

How would harvest operations impact coarse woody debris?

Forest management activities have the potential to benefit large woody debris accumulation through strategic recruitment by cutting and leaving large wood in situ. Smaller materials are left in place through slashing of small diameter trees. Under the proposed action and the sub-alternative, prescribed burning operations would be designed to consume smaller (< 8") woody debris on the forest floor, while not consuming material over 8" diameter through timing of burn operations and close observation of fuel moisture conditions. In that case the smaller diameter materials would have provided nutrient cycling to the soil, and the larger (>8") material will remain on site for long term soil stabilization and habitat. This issue is eliminated from detailed analysis because the proposed treatments would improve forest CWD recruitment through implementation. See Section 11.0.2 of Appendix F: Design Features for the Proposed Action.

How will mechanical harvest operations impact soil productivity?

Under the proposed action and sub-alternative, the inclusion of design features and best management practices to protect soil resources has been proven effective by long term monitoring of best management practices (BMPs) which began in Montana in 1987 (MT-DNRC 2022). Recently, in 2022 an interdisciplinary, interagency team organized by the MT DNRC reviewed 38 sites across state, private and federal ownership in Montana and found that BMPs were properly applied 97% of the time, and BMPs were effective in protecting soil and water resources over 98% of the time, since the previous monitoring cycle (MT-DNRC 2022). Timing of operations and avoidance of mechanical operations on wet soil conditions is the best method to maintain and protect soils, and is standard practice as recommended by the Montana Forestry Best Management Practices (MT-DNRC 2015). Light and moderate soil compaction is often reversible through natural freeze-thaw cycling and re-establishment of forest understory vegetation; more severe soil compaction must be addressed through decompaction. Soil productivity will be evaluated during forestry BMP reviews of project implementation. If necessary, because of observed impacts, a 2- and 5-year post-harvest monitoring plan will be developed to assess soil recovery over time. See Section 11.0.1 and 11.0.16 of Appendix F: Design Features for the Proposed Action.

How will mechanical harvest operations impact lotic and lentic riparian features properly functioning condition (PFC) status?

The Missoula RMP (USDI-BLM 2021), Appendix B discusses the effectiveness of managing for Riparian Conservation Areas (RCAs) through adaptive management techniques that improve or maintain aquatic habitat at the site-specific level.

For the Clark Fork Face project, RCAs for all lotic and lentic features were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess RCA widths; these site-specific RCAs and RMOs are listed below. The intent of these buffers is to meet the objectives of Montana Stream Management Zone (SMZ) buffers, meet the intent of the Montana Department of Environmental Quality Memorandum of Understanding to manage streams to maintain or improve water quality in 303(d) listed stream in support of the Clean Water Act, and meet Forestry Best Management Practices (MT-DNRC 2015) to maintain water quality. During layout, field crews would review these RCA buffer widths per stream and coordinate with fisheries / hydrology staff to assure that RMOs are met. See Section 11.0.3 of the Appendix F: Design Features for the Proposed Action.

The Clark Fork Face project includes 12 miles of perennial and 55 miles of intermittent streams on BLM-managed public lands and includes Westslope Cutthroat and Bull Trout occupied streams and their tributaries. Many of these watersheds are managed by multiple ownerships, including BLM, Forest Service, State of Montana, and private lands.

While riparian management objectives are site specific to each stream, the following RMOs were developed as the baseline objectives for the project area; additional RMOs for site specific locations are included in Table 4.

Baseline Riparian Management Objectives include:

- Shade and Temperature: Maintain and/or improve riparian area shade through management of canopy cover. Where needed, this may include improvement of stream adjacent vegetation through plantings and small tree thinning to improve forest structure.
- Sediment: Avoid sediment delivery to lotic and lentic features; where sediment is anticipated from project activities (hauling or other mechanical treatment), BMPs and additional riparian area improvements will be evaluated.
- Large Woody Debris: Maintain or improve large woody debris to improve aquatic habitat.
- Water Quality: Where applicable, Clean Water Act 303(d) listed streams and/or riparian areas not meeting Properly Functioning Conditions will be further assessed for opportunities to improve riparian areas.

Table 4: Clark Fork Face Lotic Riparian Management Objectives and Conservation Area Buffers

Lotic Feature Name	Stream Miles (BLM lands)	Perennial or Intermittent	PFC Functional Rating	Riparian Management Objectives	RCA Buffer Width (ft)
Allen Creek	0.03	P	No data	See baseline.	300

Lotic Feature Name	Stream Miles (BLM lands)	Perennial or Intermittent	PFC Functional Rating	Riparian Management Objectives	RCA Buffer Width (ft)
Bear Creek	6.50	P	PFC	See baseline.	300
Bear Gulch	0.25	I	N/A	See baseline.	50
Black Bear Creek	1.30	P	FAR-I	PFC is rated FAR-I. Improve riparian vegetation through LWD placement and shading.	50
Blackfoot Tributaries	0.71	I	No data	See baseline.	50
Cannonball Gulch	0.40	I	PFC	See baseline.	50
Cave Gulch	1.26	I	PFC	See baseline.	50
Cayuse Gulch	1.36	I	NF	See baseline.	50
Chicken Run	1.22	P	PFC	Baseline RMOs and following treatment, repair riparian exclosure fence that is currently extensively damaged from trees falling on fence.	150
Clark Fork	2.92	P	N/A	303(d) listed for sediment, heavy metals, and temperature.	300
Clark Fork Tributaries	0.65	P	N/A	See baseline.	150
Cramer Creek	2.05	P and I	No data	303(d) listed for sediment, the BLM has implemented restoration project to mitigate these impacts. See baseline.	300
Deep Creek	5.71	P and I	FAR-I and PFC, reach dependent	Sediment and Nutrients	50

Lotic Feature Name	Stream Miles (BLM lands)	Perennial or Intermittent	PFC Functional Rating	Riparian Management Objectives	RCA Buffer Width (ft)
Edwards Gulch	0.35	I	No data	See baseline.	50
First Chance Gulch	1.36	P and I	FAR - Static	See baseline.	150 along perennial stretches, 50 along intermittent
Gambler Creek	1.40	P and I	No data	See baseline.	150 along perennial stretches, 50 along intermittent
Garden Gulch	0.53	I	No data	See baseline.	50
Greenough Creek	1.12	P	PFC	See baseline.	300
Kearns Creek	2.69	P and I	PFC	See baseline.	150 mechanical treatment, 50 feet hand thinning
Little Bear Creek	0.57	I	No data	See baseline.	50
Mulkey Gulch	6.58	P and I	PFC	See baseline.	Wet Mulkey – 150 feet, Dry Mulkey – 50 feet
Rattler Gulch	4.57	I	No data	Reduce stream sedimentation and restore channel geomorphology through road management	150

Lotic Feature Name	Stream Miles (BLM lands)	Perennial or Intermittent	PFC Functional Rating	Riparian Management Objectives	RCA Buffer Width (ft)
				Pull culvert in headwaters of (west fork) Rattler Gulch to improve hydrologic function. Work with partner agencies (Granite County and state) to improve road drainage on Rattler Gulch Road.	
Ravenna	0.68	I	No data	See baseline.	300
Ryan Creek	0.27	I	No data	Manage for genetically pure westslope cutthroat.	300
Sheep Gulch	1.98	I	No data	Consult project hydrologist and engineers for road building to minimize sediment impacts.	50
Sleepy Tom Gulch	1.36	P and I	No data	See baseline, no concerns.	50
Spring Gulch	0.25	P and I	N/A	See baseline.	50
Tenmile Creek	1.99	P	FAR	303d listed for sediment and nutrients from historic mining and road construction.Management actions should work to reduce sediment from road undercutting on BLM lands (reroutes) and stabilizing gully formation through grazing management.	150
Tie Gulch	0.03	I	N/A	See baseline.	50
Union Creek	7.58	P and I	PFC	Manage for	300

Lotic Feature Name	Stream Miles (BLM lands)	Perennial or Intermittent	PFC Functional Rating	Riparian Management Objectives	RCA Buffer Width (ft)
				genetically pure westslope cutthroat and managing for sediment. Road BMPs needed before hauling.	
Wallace Creek	0.62	P and I			150
W. Ashby Creek	0.98	P	No data		300
Washoe Creek	2.27	P	PFC and FAR-Static, reach dependent	Manage for populations of genetically pure westslope cutthroat and reducing sediment. Road BMPs needed before hauling.	300
Unnamed Intermittent	5.94	I	N/A	See baseline RMOs for unnamed intermittent reaches.	50 feet
Grand Total	**67.47**				

Table 5: Clark Fork Face Lentic Riparian Management Objectives and Conservation Area Buffers

Lentic Feature Name	Riparian Acres (BLM lands)	Perennial or Ephemeral	Riparian Management Objectives	Treatment Acres within Sub-Watershed	Project RCA Buffer Width
Deep Creek Pond	0.33	P			50
Mulkey Oxbow 1 Clark Fork River	0.00027	P			50
Mulkey Oxbow 2 Clark Fork River	1.77	P			50
Ozan Wetland 1	0.06	P/E			50
Ozan Wetland 2	1.26	P			50
Ozan Wetland 3	0.06	P			50
Rest Stop Oxbow Bearmouth at Clark Fork River	7.87	P/E			300
Rock Creek Oxbow Clark	0.30	P			150

Fork River					
Total Acres	11.64				

Because of these site-specific project Riparian Conservation Area buffers and the required design features listed in Section 11.0.3 of the Appendix F: Design Features for the Proposed Action, this is not an issue for further analysis.

How will prescribed fire operations impact hydrologic function of riparian areas (lotic and lentic features)?

Under the proposed action and sub-alternative, incorporation of design features will minimize fire effects in riparian areas; the intent of this design feature is not to eliminate fire from riparian areas, rather it is to reduce fire severity in order to manage for riparian benefits, including expedited soil biogeochemical cycling and riparian seed germination. See Sections 11.0.3 and 11.0.4, Appendix F: Design Features for the Proposed Action.

How would construction of new permanent roads impact hydrologic function of riparian areas (lotic and lentic)?

The Missoula Resource Management Plan (UDSI-BLM 2021) provides this direction for road construction:

> FP-OBJ-4. Build new permanent roads, if necessary, to facilitate long-term management of areas to meet forest resource objectives, and close temporary roads upon completion of project implementation. Replacement, maintenance, and decommissioning of existing roads to meet transportation planning and management objectives could also occur during forest product management projects if deemed appropriate at the project level.

Within the Proposed Action, any new permanent roads would follow state BMP requirements and design criteria from the RMP (UDSI-BLM 2021). Roads would be designed to meet road drainage concerns, built outside of RCAs (defined above) and would be subject to continued monitoring for BMP effectiveness and maintenance needs. While all roads have an impact on overall watershed function, any new roads would be designed to minimize impact on overall hydrologic function and riparian function. The effects of temporary road related actions on hydrologic function in lotic and lentic riparian areas has no potential for significant effects due to PDFs identified in Section 11.0.4 and 11.0.17, Appendix F: Design Features for the Proposed Action.

How will construction of new temporary roads impact hydrologic function of riparian areas (lotic and lentic)?

Impacts from temporary roads are anticipated to be short term in duration and result in removal of the road prism from the landscape. Forest management activities require adherence to management direction and the application of applicable project design features in designing and constructing temporary roads to maintain or improve water quality. The design features include methods that either avoid or minimize the delivery of sediment to streams. Further, mitigations to restore soil and hydrologic function of these features would facilitate recovery of these features, with recovery of soil-water infiltration, vegetation, and soil recovery occurring in 10 to

40 years (Luce 1997, Lloyd et al. 2013). The effects of temporary road related actions on hydrologic function in lotic and lentic riparian areas has no potential for significant effects due to PDFs and BMPs identified in Section 11.0.4 and 11.0.17, Appendix F: Design Features for the Proposed Action.

How will road maintenance and commercial log haul impact water quality and riparian function?

Commercial road uses and road maintenance treatments have potential for impacts to water quality and riparian conservation areas; these impacts may include short term increases in stream sediment from loosened road prisms during blading and ditch cleaning, temporary changes in stream structure from activities such as culvert replacements, and changes to stream adjacent shading from vegetation removal. Impacts from road maintenance activities and commercial road uses and effectiveness of mitigations for these techniques have been closely studied (USDI - USDA Inland Native Fish Strategy, 1995, Foltz et al. 2008, MT – DNRC BMP Effectiveness Report 2022, Miller 2014). The greatest impact to water quality associated with road use and road maintenance is the increased potential for fine particulate matter from road materials to get into solution during periods of heavy road use during periods of rain or wetted road conditions (Miller 2014, Foltz et al. 2008).

Common road design criteria, such as limiting road use during extended wet periods, adding slash filter windrows and/or road adjacent sediment capturing devices like straw waddles have shown up to 70% reduction in road sediment reaching streams (Foltz et al. 2008, Kemp et al. 2016). Additionally, sediment increases from road maintenance activities have been shown to have very localized impacts, for example – a culvert replacement project was studied to assess increased stream turbidity. The project caused a localized increase sediment production within 100 meters of a crossing, but within 800 meters there were no noticeable impacts (Foltz et al. 2008). When mitigation measures, in this case sediment capturing straw waddles, were utilized the impact dropped to 2% of the impacts without mitigation measures. Mitigations and impact minimization techniques are incorporated into the Alternative 2 Proposed Action and Sub-Alternative 2b: see Section 11.0.4 and 11.0.17, Appendix F: Design Features for the Proposed Action.

How would implementation of the proposed project affect cultural resources, and tribal sacred sites?

As a component of the consultation for this project, the BLM has developed a Programmatic Agreement that has been reviewed by the State Historic Preservation Office (SHPO) (comments received as of May 2023), and the Advisory Council on Historic Preservation (ACHP) (comments received as of Oct. 2023). Additionally, the PA was provided to Tribal Historic Preservation Office for their comment. According to the Programmatic Agreement it has been determined that a phased identification and evaluation of historic properties, determinations of effect, mitigations and consultation will be carried out after issuance of the decision record, but prior to authorizing implementation. All affected areas according to the proposed action will have class III inventories conducted prior to project implementation. Historic / prehistoric / cultural sites and properties would be avoided during implementation. See Appendix F, Section 11.0.5 for Design Features specific to Cultural and Archeological resources.

How would disturbance from project implementation affect Special Status Plants: keeled bladderpod and Howell's gumweed?

Under the proposed action and sub-alternative, during layout Special Status Plant populations would be located via identification of likely habitats and field reconnaissance. Identified populations would be avoided where possible during implementation either through buffering, monitoring, or similar. Timing restrictions would be implemented when appropriate, i.e., targeting operations during periods of plant dormancy. In the case of Howell's gumweed, the BLM would look for opportunities to collect seeds and replant disturbed areas after implementation. During noxious weed control efforts, the BLM would avoid spraying herbicide on Special Status Plant populations and look for opportunities to implement biocontrol methods for noxious weed control where Special Status Plants exist. See Section 11.0.6 of the Appendix F: Design Features for the Proposed Action.

How would implementation of the proposed project affect livestock grazing within an allotment?

Grazing within the planning area would continue with the likely effect of the treatments being more forage availability 1-5 years after treatment. No change in grazing allotments or Animal Unit Months (AUMs) is proposed with either alternative and so while reduced forest stocking will likely allow more grass and forb growth due to increased sunlight and water availability in the lower canopy layers, the number of AUMs would remain unchanged leading to more forage availability for wildlife. Grazing does have the effect of reducing grass biomass during their season of use (typically May – Oct.) which would have an additive effect of reducing fuel loading in the planning area and thereby working in concert with the proposed action to reduce wildfire risk.

Forest improvement and fuel reduction projects generally do not impact livestock grazing because livestock are typically accustomed to machinery and can move away from treatment activities as needed. Additionally, only a portion of the proposed treatments are located in areas currently grazed by livestock. More information on grazing allotments and season of use in the CFF planning area is available at the Missoula Field Office.

How would project implementation impact solid mineral development?

The scale of solid minerals projects in the CFF planning area are typically small (<5 acres), active for only a few weeks of work season, and flexible in operation. Alternatively, if there are no active solid minerals operations present at the time of implementation, the issue can be dismissed because the resource is not present. For these reasons impacts to solid minerals are minimal and not significant. See Section 11.0.7 of the Appendix F: Design Features for the Proposed Action.

How would Abandoned Mine Lands (AML) impact on-the-ground safety of the workforce that implemented the vegetation treatment under the CFF?

Under the proposed action and sub-alternative, during layout and reconnaissance, field crews would coordinate with the MiFO geologist to use AMSCM and local AML.gdb (GIS data) to identify areas of avoidance; or change of treatment type to reduce people on the ground.

With AML site avoidance as a design feature, the impacts are minimal. Alternatively, if there are no AML features identified in the project area, the issue can be dismissed because the resource is not present. See Section 11.0.8 of the Appendix F: Design Features for the Proposed Action.

How would harvest units, and the construction and rehabilitation of roads affect the visual characteristics of the landscape?

The CFF planning area is comprised entirely of Visual Resource Management (VRM) Area IV as designated by the RMP (UDSI-BLM 2021). As stated in the RMP Record of Decision, Section 11.2.11: *In VRM Class IV – Every attempt should be made to minimize impact of activities through careful location, minimal disturbance and repeating the basic elements of form, line, color and texture found in the predominant landscape.*

Under the proposed action and sub-alternative, during layout and reconnaissance field crews would coordinate with the Missoula FO VRM program manager to assure VRM Class IV requirements are met, and visual impacts are appropriately addressed or mitigated. See Section 11.0.9 of the Appendix F: Design Features for the Proposed Action.

How would increased traffic from operations affect recreationists (i.e. rock climbers, snowmobilers, hunters, tourists)?

Short term increased traffic and large vehicle traffic is expected on roads open to the public during implementation. Under the proposed action and sub-alternative, these impacts would be minimal and phased across the planning area and would not impact the entire planning area at any one time. Localized impacts to specific open roads will be reduced or mitigated through warning signs, timing restrictions, designated haul routes and similar conflict reduction techniques. For example, during layout and development of harvest plans alternative haul routes would be identified to avoid commercial traffic use on popular recreational routes during peak season. MiFO standard operating procedure and BLM program guidance dictates that all haul routes will have traffic warning signs and all active operations would be posted to warn visitors of the activity. In high use areas, additional signage would be placed at key locations such as the junction of the Garnet Range Road and MT state highway 200, to warn visitors of the activities.

By implementing the measures listed above as well as those listed in Section 11.0.10 of the Appendix F. impacts to recreationists from operations traffic would be minimal and not significant (see Section 11.0.10 of the Appendix F: Design Features for the Proposed Action).

How would permanent road construction provide access to the public?

Under the sub-alternative, there would not be permanent road construction. Under the proposed action, all proposed new permanent road segments are extensions of currently closed roads or would be closed to motorized use after implementation; no additional motorized routes are proposed, but closed roads would be available for non-motorized recreation. While these proposed roads would provide some increased opportunity for non-motorized recreation, the impact is minimal. The 31 proposed permanent spur roads would range in length from 0.07 to 1.32 miles and average 0.5 miles each. As these are typically short additions to existing roads, they do not amount to new recreational opportunities. All proposed new permanent spur roads would be physically closed to public motorized use immediately upon construction. Physical

closures include but are not limited to gates, boulders / riprap, Kelly-humps / tank-traps, or obliteration of a segment of road at its origin. Closures would be monitored via contractors, BLM employees and volunteer public who would be directed to immediately document and report any breach observed to the BLM. Upon notification of a failed closure, the BLM would take action to repair, replace or improve the closure within 30 days or as soon as conditions allow (periods of deep snow or saturated roads may delay closure repair or replacement depending on the season of discovery). As all proposed new spur roads would be closed and monitored for effectiveness, zero miles of new open motorized routes are proposed (see Appendix F Design Features for the Proposed Action, Section 11.0.17).

Temporary roads would be reclaimed / obliterated after use, and thus would provide short-term non-motorized access. The 23 proposed temporary spur roads would range in length from .03 to .88 miles and average 0.27 miles. These temporary spur roads would be utilized for a specific treatment and would remain in place for no longer than 3 years from time of construction. Following use and at the conclusion of the treatment, all temporary roads would be obliterated or made impassable, and have drainage features and native seed applied (See Appendix E. Figure 22 for an example of temporary spur road obliteration, and Appendix F. Design Features for the Proposed Action Section 11.0.17).

No change in snowmobile access is anticipated. Per current management direction, snowmobiles are already allowed to use much of the project area on or off roads. In Area Designation 4, snowmobiles are not allowed at all. Proposed new road segments in Area Designation 4 (See the Missoula Field Office 2020 Travel Map) will remain closed to snowmobiles.

Therefore, no new motorized routes are proposed, no new snowmobile routes or open areas are proposed, and the effect of proposed spur roads on recreational activity is minimal due to their short length and location at the ends of or spurring off currently existing roads. No change in recreational activity is anticipated from the Proposed Action or the Sub Alternative 2b.

How would the proposed action affect the National Winter Recreation Trail/Garnet Winter Backcountry Byway?

The planning area is not a primary destination for snowshoeing and skiing as there are better destinations nearby (Blue Mountain Recreation area, Pattee Canyon recreation area, the Rattlesnake National Recreation Area and Lubrecht Experimental Forest all provide groomed ski and snowshoe trails within an hour's drive of the project area). Cross-country skiers do utilize the Garnet Range Road currently, but the proposed road new segments would dead-end and only range from .07 to 1.32 mils, averaging .5 miles. These new road spurs are not expected to increase cross-country skier use as there will be no loops or new routes (proposed spurs would only slightly lengthen currently available routes).

Short term impacts are potential such as a reduced season of use for recreationists or loss of certain routes during project implementation. Recommendations to reduce user conflict and recreation impacts have been incorporated into the Project Design Features. For example, during layout and development of harvest plans, alternative haul routes would be identified to avoid commercial traffic use on popular recreational routes during peak season. MiFO standard operating procedure and BLM program guidance dictates that all haul routes will have traffic

warning signs and all active operations would be posted to warn visitors of the activity. In high use areas, additional signage would be placed at key locations such as the junction of the Garnet Range Road and MT state highway 200, to warn visitors of the activities. Site specific Design Feature are listed in Section 11.0.11 of the Appendix F: Design Features for the Proposed Action.

How would the new, permanent roads affect mechanized use in the area?

Non-motorized uses in the proposed planning area consist primarily of walk-in hunting, very limited cross-country skiing, very limited rock climbing and some mountain biking on roads. There are no designated mountain bike trails within the planning area and the planning area is not a mountain bike destination: according to mountain bike trail apps and websites such as MTB Project and Trailforks, there are no mountain bike trails within the planning area, and Mountain Bike Missoula does not show this area as being a place to mountain bike. Although a nearby resort does offer a mountain bike ride experience to guests, it is on open roads where use is shared. Some bicycle-based hunting may occur, but there is no documented evidence as to the number of users, and since mountain bikes and non-motorized users can currently use closed roads, that use is not expected to change.

Under the sub-alternative, there would not be any new, permanent roads. Under the proposed action, the proposed new permanent road segments range from .07 miles to 1.3 miles and average .5 miles in length. Building these proposed spurs is not expected to increase mechanized use as there are better mountain bike destinations nearby that provide loops, scenic destinations, challenges, parking, etc. The Blue Mountain Recreation Area, and the Rattlesnake National Recreation Area are both within 5 miles of Missoula, and the Copper City Trails area near Three Forks, MT (180 miles east of the planning area) all provide mountain bike specific experiences. Current bicycle-based hunting is expected to continue with little change due to the short segment lengths of the proposed spurs described above.

New road segments are not expected to bring more cross-country skiers for the same reasons as they are not expected to attract mountain bikers. Better sites with dedicated trails and parking exist nearby such as the Pattee Canyon Recreation Area (within 5 miles of Missoula), Lubrecht Experimental Forest (partially within the planning area) and private sites maintained by Nordic clubs. The Missoula Nordic Club regional trail map at missoulanordic.org does not show any cross-country ski opportunities in the planning area other than the existing Lubrecht Experimental Forest system.

No change in rock climbing is expected as the access to the sites will remain unchanged.

How would proposed treatments in each alternative affect fisheries habitat within the planning area (including SSS species and designated critical habitat)?

The Missoula RMP (USDI-BLM 2021), Appendix B discusses the effectiveness of managing for Riparian Conservation Areas (RCAs) through adaptive management techniques that improve or maintain aquatic habitat at the site-specific level.

For the Clark Fork Face project, RCAs for all fisheries were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess RCA widths; these site-specific RCAs and

RMOs are listed in table 4 above. The intent of these buffers is to meet the objectives of Montana Stream Management Zone (SMZ) buffers, meet the intent of the Montana DEQ MOU to manage streams to maintain or improve water quality in 303(d) listed stream in support of the Clean Water Act, and meet Forestry Best Management Practices (MT-DNRC 2015) to maintain water quality.

Under the proposed action and sub-alternative, during layout, field crews would review the site-specific implementation notes in the Clark Fork Face project record for RCA buffer widths per stream and coordinate with fisheries / hydrology staff to assure that RMOs are met. See Sections 11.0.3 and 11.0.12 of the Appendix F: Design Features for the Proposed Action. When treatments are designed to comply with the Aquatic and Riparian Habitat Conservation Strategy, adverse impacts to aquatic habitats will be negligible.

How will new road construction affect fisheries habitat within the planning area (including Special Status Species and designated critical habitat)?

No new road construction would occur anywhere in the planning area under the sub-alternative. Under the proposed action, no new road construction is proposed within RCAs. Also under the proposed action, new road construction adjacent to RCAs will follow BMPs (MT-DNRC 2015) and Design Features to minimize or eliminate potential impacts to fisheries habitat. All authorized activities will be designed and implemented to conserve Riparian Management Objectives, indirectly conserving fisheries habitat See Sections 11.0.3 and 11.0.17 of the Appendix F: Design Features for the Proposed Action.

How will proposed treatments in the alternatives affect the western toad and habitat within the planning area?

Western toads concentrate near wetlands associated with stream corridors and lentic waterbodies.

The Missoula RMP (USDI-BLM 2021), Appendix B discusses the effectiveness of managing for Riparian Conservation Areas (RCAs) through adaptive management techniques that improve or maintain aquatic habitat at the site-specific level.

For the Clark Fork Face project, RCAs for all lotic and lentic were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess RCA widths; these site-specific RCAs and RMOs are available in the Clark Fork Face project record at the Missoula Field Office. The intent of these buffers is to meet the objectives of Montana Stream Management Zone (SMZ) buffers, meet the intent of the Montana DEQ MOU to manage streams to maintain or improve water quality in 303(d) listed stream in support of the Clean Water Act, and meet Forestry Best Management Practices (MT-DNRC 2015) to maintain water quality.

During layout, field crews would review the site-specific implementation notes in the Clark Fork Face project record for RCA buffer widths per stream and coordinate with fisheries / hydrology staff to assure that RMOs are met. See Sections 11.0.3 and 11.0.13 of the Appendix F: Design Features for the Proposed Action.

By following BMPs (MT-DNRC 2015) and Design Features that conserve riparian and wetland habitats, western toad populations and habitats will be minimally affected (see Appendix F: Design Features for the Proposed Action).

How will proposed treatments affect Environmental Justice?

Environmental Justice was considered, but no issues of concern were identified in the Clark Fork Face planning area. Within the Clark Fork Face planning area, 25% of the population is low income and 10% ethnic minority. This is less than the percentages within the broader reference point of the tri-county area (Missoula, Granite, and Powell Counties) in which 32% of the population is low income and 11% of the population is considered minority. It is not anticipated that there would be any disproportionate impacts on the existing EJ population(s) within the planning area and, therefore, an issue considered but not carried forward for detailed analysis. This analysis could be revisited if additional information is revealed as a result of public comment or other source during the EA process.

How would the Alternatives affect noxious weed populations in the planning area?

Under the proposed action and sub-alternative, the Missoula Field Office (MiFO) timber harvesting SOP as well and BMPs require washing of all off road equipment prior to entry onto public lands. Additionally, all native seed application that are required for site rehabilitation will be certified weed freed see and verified as such by MiFO personal. By reducing introduction of weed seed via washing and seeding exposed soils with weed-free native seed, the likelihood of noxious weed introductions and new populations is minimized. Additionally, the planning area would at the time of implementation be included in the MiFO Integrated Weed Management program, which includes herbicide application, biocontrol application, population monitoring and early detection and rapid response.

By implementing the design features listed in the Appendix F as well as those listed in the 2021 RMP (UDSI-BLM 2021), which are required for the proposed action and sub-alternative, the Missoula Field Office Integrated Weed Management Plan (USDI-BLM 2019) and the Integrated Weed Management Environmental Assessment (USDI-BLM 2009), increases to noxious weed populations would be minimal and likely reduced. See Section 11.0.18 of the Appendix F: Design Features for the Proposed Action.

How would the Alternatives affect greenhouse gas emissions?

The proposed action and sub-alternative would be expected to result in a net carbon storage increase compared to the no action alternative although a degree (approximately 20% more) for the proposed action versus the sub-alternative. While an initial forest carbon loss is expected immediately following treatment (1-10 years), a longer-term (20 – 50 years) forest carbon gain is expected as tree vigor and forest health improve over pre-treatment condition. As mentioned in Lippke et al.,2004, “The greatest rate of carbon storage occurs in the first 50 years of growth and then the rate lessens over time… from empirical data there is little if any increase beyond 120 years” (Lippke et al., 2004a). Additionally, forest products such as building materials continue to store carbon while the forest carbon stores increase through vigorous growth, having an additive and compounding effect on carbon sequestration through time (OFRI 2006).

The anticipated reduction in wildfire risk from the proposed action and, to a lesser extent the sub-alternative, also reduces the potential carbon emissions from to large-scale mega-fires. As stated in Krankina and Harmon 2006: "Restoring forest resilience to extreme disturbance events through thinning to reduce stocking levels can generate wood-based products or biomass energy as byproducts of forest treatments while decreasing the likelihood that large-scale future disturbances would create both immediate and long-term carbon releases through fire or decomposition." Lower stocking and diverse species tend to reduce fire severity resulting in more trees surviving the fire and hence more carbon stored than if a fire kills most or all standing trees (OFRI 2006). The proposed action and, to a lesser extent the sub-alternative, is also expected to have a beneficial impact on greenhouse gas emissions by producing wood for building materials and by using wood as fuel instead of fossil fuels (OFRI 2006).

See section 2.0 for discussion of carbon sequestration and climate change related to the No Action Alternative and Section 3.2.3 for a discussion of carbon sequestration and climate change related to the Action Alternative.

How would the Alternatives affect federally threatened species Whitebark Pine?

In Montana, WBP is generally known to occur in the subalpine, at elevations from roughly 7000' to the tree line. The highest elevation in the planning area is 7,017 ft (2,139 m) while the highest elevation within the proposed treatments would be 6,806 ft (2,074 m). Therefore, very little potential WBP habitat occurs in the planning area, although habitat for a closely related five-needle pine, the limber pine (*Pinus flexilus*) does occur. Limber pine occurs within the planning area at elevations from 4500' – 6000'. WBP and limber pine are difficult to distinguish when immature and are most easily distinguished by cone shape and color once they reach sexual maturity. Due to that, elevation and habitat are commonly used to determine species in the absence of cones.

In 2014 – 2015, the Missoula Field Office undertook a comprehensive field search for five-needle pine on BLM lands within the field office. Habitat suitability models as well as topographic maps were used to identify likely sites, and field crews conducted grid searches for individuals. During that inventory, on BLM lands across the field office 95 WBP were located as well as 45 limber pines. Twenty-six limber pine were identified in the CFF planning area, which has informed the limber pine enhancement treatment of the proposed action. Zero WBP were located in the planning area, with the closest identified individuals occurring within the Hoodoo Mountain Wilderness Study Area, approximately 5 air miles east of the planning area. One individual tree that is potentially WBP (true species undetermined) was located approximately 2 miles north of the planning area at an elevation of 6800' on Elevation Mountain, and two more potential WBP (true species undetermined) were found at 6800' on Chamberlain Mountain approximately 6.5 miles north of the planning area. One individual of undetermined species was found within the planning area at 5800' however it is not likely a WBP based on elevation and habitat, it is on a neighboring ownership and is not within any proposed treatment under the Alternative 2 or Sub Alternative 2b (See map 9.14 CFF proposed actions and 5 needle pine locations).

A search of the Montana Natural Heritage Program database also indicates no occurrences in the planning area, while the WBP habitat suitability model indicates Low Suitability or Unsuitable throughout the planning area (Montana Natural Heritage Program. 2020).

Based on those inputs described, the BLM determined that the Alternative 2 Proposed Action would have No Effect on WBP. The No Effect determination was documented in the Biological Assessment and the USFWS concurred with the determination in the Biological Opinion on 11/8/22. Although the 11/8/22 Biological Opinion misstated the determination on WBP as No Jeopardy, a correction from the USWFS dated 2/6/23 clarified the determination is No Effect. The Sub Alternative 2b has a reduced treatment area within the planning area and thus would also have No Effect.

In the summer of 2023, the USFWS updated their WBP range map (See Figure 6 below) which does include parts of the planning area, but as the Missoula BLM has conducted rigorous forest sampling and inventory which has been used extensively to develop the Proposed Action (and Sub Alternative), there is no change in determination of effects.

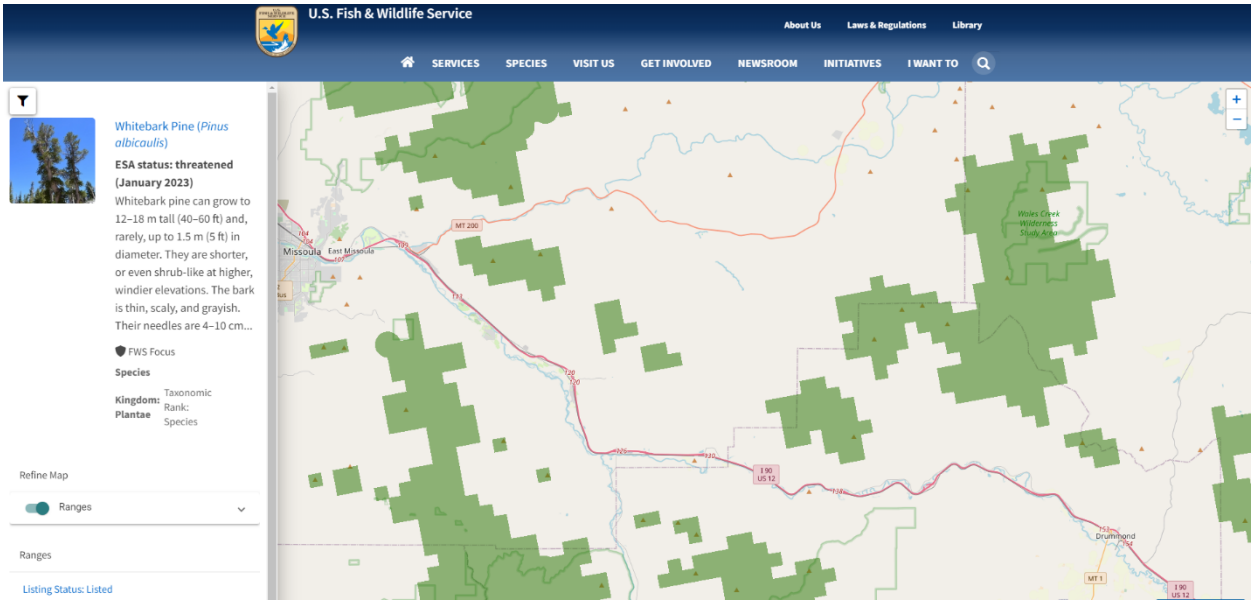


Figure 6: Updated WBP range map from the USFWS as of 10/2023, zoomed to the plannign area between Missoula and Drummond, MT.

2 Alternatives

Alternative 1 – No Action Alternative

The No Action Alternative would not implement the Proposed Action. The No Action Alternative would result in no acres treated on BLM lands in the planning area. The No Action Alternative would fail to meet the purpose and need of the Proposed Action to protect life, property, and firefighter safety in and near the WUI; restore healthy ecological conditions;

maintain and enhance native plant communities; increase resistance and resilience to forest insects and disease; and provide local and regional economic benefits.

The National Fire and Fire Surrogate Study (Schwilk et al. 2009) evaluated measurements taken before and after fuel reduction treatments (prescribed fire, mechanical treatments, and the combination of the two) at 12 Fire and Fire Surrogate (FFS) sites located across United States to test their relative effectiveness. One of the test sites was within the Lubrecht Experimental Forest, which lies in and adjacent to the planning area (see "State- U of M lands" indicated on map 9.0 in the Appendix D). The Lubrecht site in the FFS included a stand that was harvested in 2001, a site that was harvested and had prescribed burning preformed in 2002, and an untreated control stand. The FFS concluded that mechanical (harvesting) treatments, mechanical plus prescribed burning, and prescribed burning alone were all effective at reducing stand density, improving residual tree vigor and reducing hazardous fuels as compared to the control, with each treatment exhibiting its own unique strengths. The FFS was also explored whether treatment effected tree-level defense and stand structure resistance to Mountain Pine Beetle (MPB). Mortality from MPB was highest in the denser, untreated control and burn-only treatments, with approximately 50% and 39%, respectively, of ponderosa pine killed during the outbreak, compared to almost no mortality in the thin-only and thin-burn treatments.

The No Action Alternative would produce no improvement to forest health and resiliency on BLM managed lands at a landscape scale within the planning area. Lacking these improvements to forest health and resiliency, no effort would be made to produce forests into the future which are best suited to survive the anticipated changes in climate (UC-ANR. 2017). As stated in Adapting Forests to Climate Change: To help your mixed-conifer forest adapt to climate change, consider ways to encourage resilience to drought, fire, and insect attacks. Strategies include thinning to reduce competition, managing for species diversity, and selecting seedlings that are likely to survive a warmer, drier climate (UC-ANR. 2017).

The no action alternative is expected to result in no increase in the carbon storage rate as compared to the current condition. As mentioned in Lippke et al., 2004, "The greatest rate of carbon storage occurs in the first 50 years of growth and then the rate lessens over time… from empirical data there is little if any increase beyond 120 years" (Lippke et al., 2004a). Additionally, no carbon sequestration through production of forest products such as building materials would occur.

The No Action Alternative would result in no reduction in risk from wildfire on BLM managed lands in the planning area and no corresponding reduction in potential carbon emissions from large-scale mega-fires. As stated in Krankina and Harmon 2006: "Restoring Forest resilience to extreme disturbance events through thinning to reduce stocking levels can generate wood-based products or biomass energy as byproducts of forest treatments while decreasing the likelihood that large-scale future disturbances would create both immediate and long-term carbon releases through fire or decomposition." Lower stocking and diverse species tend to reduce fire severity resulting in more trees surviving the fire and hence more carbon stored than if a fire kills most or all standing trees (OFRI 2006). The No Action Alternative would have no beneficial impact on greenhouse gas emissions by producing wood for building materials and by using wood as fuel instead of fossil fuels (OFRI 2006).

As demonstrated, without treatment, the stands would continue to exhibit heightened risk of uncharacteristic wildfire, continued forest pest outbreaks and epidemics, and further deviation from the midpoint of NRV. These persistent and increasingly unhealthy forest conditions would present a continued and heightened potential for loss of private structures and life due to catastrophic wildfire, as well as loss of habitat for wildlife including federally listed threatened species.

Under this alternative, the BLM would continue to implement current federal and state regulations, policies, and decisions concerning water and air quality, fire suppression, noxious weed management, and threatened and endangered species.

Alternative 2 – Proposed Action Alternative

Proposed Action Objectives

1. Reduce forest fuel loading and break up homogenous stand conditions in the WUI.
2. Increase acreage of forest communities moving towards midpoint of NRV
3. Maintain and enhance limber pine (*Pinus flexilis)* populations where present.
4. Where feasible and appropriate, provide opportunities for timber harvest including salvage of dead timber while it remains salvageable.

Mechanical and manual treatments would be used alone and in combinations to achieve these objectives. Specifically, these treatment types are:

1. Mechanical treatments involve the use of equipment such as wheeled tractors, crawler-type tractors, skidders, feller bunchers, excavators, bobcats, or specially designed vehicles with attached implements. These treatments include timber harvest with prescribed fire, and fuels management which may include mastication, grinding, machine piling and/or chipping.
2. Manual treatments include the use of hand tools and hand-operated power tools. These treatments include fuels augmentation (hand felling sapling to pole-sized trees augment fuels in sufficient quantities to better achieve burn objectives), thinning, prescribed fire, and limber pine (*Pinus flexilis)* enhancement. Conifer cone collection and planting may occur throughout the planning area depending on specific cone yield and reforestation needs.

Table 6: Proposed Treatments

CFF Proposed Treatment Acres	
Treat Group	**Acres**
Fuels Management	2,394
Limber Pine Enhancement	306
Prescribed Fire	5,068
Thinning	1,567
Timber Harvest with Prescribed Fire	9,812
Grand Total	**19,147**

Table 7: Proposed Treatments by Habitat Type Group

	Habitat Type Group Acres									
Treatment Group	HTG-1	HTG-2	HTG-3	HTG-4	HTG-5	HTG-6	HTG-9	NA	(blank)	Grand Total
Fuels Management	519	1,200	0	212	22	32	381	20	8	2,394
Limber Pine Enhancement	102	191	12				1			306
Prescribed Fire	1,240	3,153	128	356	14	89	65	20	3	5,068
Thinning	309	867	7	356	8	19	1			1,567
Timber Harvest with Prescribed Fire	2,951	5,326	59	1,290	23	162	0			9,812
Grand Total	**5,121**	**10,737**	**207**	**2,214**	**68**	**302**	**447**	**40**	**11**	**19,147**

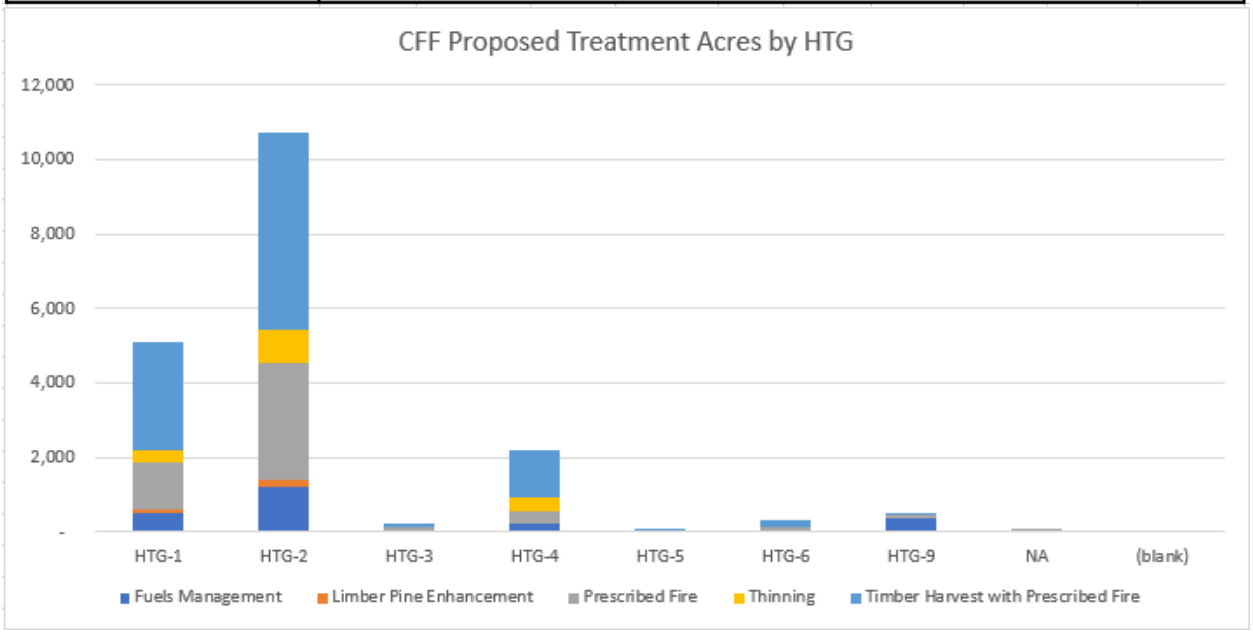


Figure 7: CFF Proposed Treatment Acres by HTG

This suite of 5 vegetation management actions (Fuels Management, Limber Pine Enhancement, Prescribed Fire, Thinning and Timber Harvest with Prescribed Fire) was determined by analysis of forest health conditions, IDT and entomologist site visits, proximity to homes and structures, primary ingress and egress routes, internal and external scoping and RMP direction as described in Section 1 of this document. The primary vegetation management activity of any given treatment unit is presented as the Proposed Action, however the treatments would all be designed with multiple benefits in mind to best meet the Purpose and Need. The proposed action has been organized so that the maximum number of acres of each treatment type are presented here and would not be exceeded (for example, no more than 9,812 acres would be treated via Timber Harvest with Prescribed Fire). The See Appendix D. Map 9.1 for locations of proposed treatments and 9.3 for habitat types on BLM lands within the planning area.

The planning area is split between two Fire Management Zones (FMZ) as established by the 2021 Missoula RMP (USDI-BLM 2021) (see Appendix D. Fire Management Zone map 9.8). The FMZ classification is used to guide and prioritize wildfire response and fuels management. FMZ 1 is characterized as having a high instance of values at risk, or areas at high risk of catastrophic fire due to current vegetation conditions, where an unplanned wildland fire is likely to cause negative effects. These lands are within and adjacent to the WUI, intermingled with

private and state lands, and contain important cultural, recreational, economic, or biological resources. FMZ 2 is generally further from values at risk, where wildland fire is desired to manage ecosystems, but constraints limit the use of wildland fire. Within FMZ 2, the full range of fuels treatments including mechanical, manual and prescribed fire on lands in this category will be important to the success of wildland fire management.

Proposed treatments within the WUI and Fire Management Zone 1 would be the highest priority on BLM administered lands and would take precedence over other resources (USDI-BLM 2021). Within the WUI and Fire Management Zone 1, these treatments may occur within Canada lynx habitat within lynx analysis units, and lynx critical habitat (USDI-BLM 2021). Within the areas designated as critical lynx habitat, treatments will focus on areas that do not provide the habitat structures constituting foraging and denning habitats in current condition. Vegetation treatments are also proposed within FMZ 2 and in that case multiple resource objectives would be pursued.

Table 8: Proposed Treatments by Fire Management Zone

Treatment Acres by Fire Management Zone			
	Fire Management Zone		
Treatment Group	FMZ 1	FMZ 2	Grand Total
Fuels Management	2,378	16	2,394
Limber Pine Enhancement	306		306
Prescribed Fire	4,981	87	5,068
Thinning	1,490	77	1,567
Timber Harvest with Prescribed Fire	9,117	695	9,812
Grand Total	**18,272**	**876**	**19,147**

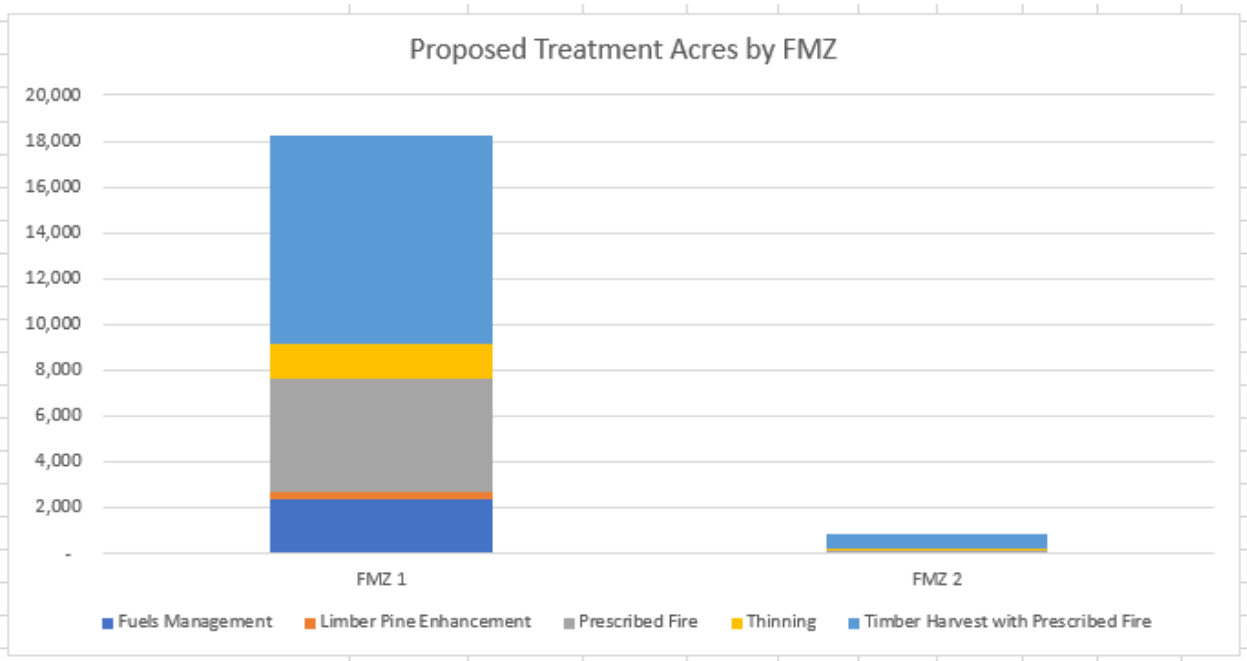


Figure 8: CFF Proposed Treatment Acres by FMZ

Table 8 indicates 876 acres of treatment are proposed in FMZ 2 (<5% of the proposed action). Of those, 104 acres (≈ 0.5% of the proposed action) are considered current lynx habitat as defined by the Biological Assessment for this project (Habitat Type Groups (HTG) 4, 5, or 6 and cover types that include subalpine fir or Engelmann spruce). Despite being within FMZ 2, these 104 acres are intermixed with and adjacent to private land and present the same risks to life, property and firefighter safety as forested stands in nearby FMZ 1. These areas were included in the formal consultation with the USFWS, and in the resulting Biological Opinion (issued 11/8/22) are defined as FMZ 1 and 1-mile buffer of areas functioning as WUI (see Appendix D, maps 9.9 and 9.10 for the Alternative 2 Proposed Action and the Sub-Alternative 2b overlayed with the structures and one mile buffer).

In FMZ 2 where treatments occur within Canada lynx habitat within lynx analysis units, and lynx critical habitat, treatments would be designed to enhance and create dense early stand initiation forage habitat, in a mosaic pattern across the landscape over space and time. These treatments are intended to result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx, however, to the extent possible these treatments would only be applied in areas not currently providing lynx foraging and denning habitats (USDI-BLM 2021).

Prescribed Fire Treatments (Approximately 5,068 acres)

Objectives for the prescribed fire treatments are to protect life, property and firefighter safety in and near the WUI and promote resilience to unnaturally intense wildfire by reducing forest fuel loading, to create or maintain early seral conditions, and to create seedbeds to encourage natural regeneration. The prescribed burns would be low to moderate intensity broadcast burns resulting in varying degrees of mortality to the seedlings, saplings, and pole sized conifers, and low to moderate severity fire effects in the medium, large, and very large conifers. In treatment units where fuel augmentation is needed, sapling to pole-sized trees would be hand felled to augment fuels in sufficient quantities to better achieve objectives.

Within in HTG-1 – HTG-3, (approximately 4,521 acres) in Douglas-fir and ponderosa pine cover types, burns would be intended to reduce small diameter conifers by 50 to 75%, while keeping mortality in the medium to large trees at less than 10%, reduce duff to less than 40 percent from present levels, and increase mineral soil exposure less than 10 percent. In western larch cover types the burns would be intended to increase mineral soil exposure by at least 50% to create favorable seedbeds for western larch regeneration, while keeping mortality in the medium to large trees at less than 20%.

Prescribed burning would not occur in current lynx habitat as defined by the Biological Assessment for this project (Habitat Type Groups (HTG) 4, 5, or 6 and cover type that include subalpine fir or Engelmann spruce). When not in lynx habitat, within HTG-4 – HTG-6, (approximately 459 acres) in lodgepole pine cover types, the burns would be intended to increase mineral soil exposure by 20-50% to create favorable seedbeds for lodgepole pine regeneration. Within mixed conifer cover types, burns would be intended to reduce small diameter conifers by 50 to 75%, while keeping mortality in the medium to large trees at less than 20%, reduce duff to less than 40 percent from present levels, and increase mineral soil exposure less than 20 percent. In western larch cover types the burns would be intended to increase mineral soil exposure by at least 50% to create favorable seedbeds for western larch regeneration.

Across the planning area approximately 87 acres of the proposed prescribed fire treatment are within HTG-9 or have no HTG assigned. Treatments as described above would be applied as appropriate based on-site conditions.

Control lines may be used on all or portions of prescribed fire unit boundaries. These control lines may be roads, trails, rock scree, or constructed fire lines. Fire lines may be constructed by hand, machines, or using fire line explosives. Existing roads and trails accessing these units would be maintained for use during implementation. It is anticipated that approximately 300 – 1000 acres of prescribed fire treatments would occur per year, including post-harvest burning over the next 10 – 15 years. Following treatments, these sites will be monitored using the Missoula Field Office Prescribed Fire and Fuels monitoring protocols for effectiveness. Maintenance treatments such as follow up prescribed burning would be considered and implemented as needed following the initial treatment.

Prescribed burning operations would follow procedures and standards developed by the Montana Idaho Airshed Group to ensure adequate smoke dispersal in order to prevent deterioration in air quality. These procedures and standards are considered Best Available Control Technology, as determined by the Montana Department of Environmental Quality (MDEQ) which regulates open burning in Montana.

See Appendix E, Figure 6 for a representative stand image and Figures 18 and 19 for implementation examples. See Appendix D. Map 9.1 for approximate locations of proposed prescribed fire treatments. See Appendix F. Design Features for the Proposed Action, 11.0.19 Smoke Management.

Fuels Management Treatments (Approximately 2,394 acres)

The objectives of the Fuels Management Treatments are to protect life, increase the safety of firefighters, and protect property, improvements, and infrastructure. This would be accomplished by reducing fuels (tree densities and associated slash) so that during a wildland fire event there will be a greater potential for ground fire rather than crown fire, giving fire managers more options for fire management.

In these fuels management treatments, trees favored for removal would generally be shade tolerant ingrowth in the understory, while trees favored for retention would be shade intolerant species in the overstory. Via these treatments canopy base heights would be lifted by removing ladder fuels, and stocking would be reduced sufficiently to discourage crown to crown ignition. Fuels management treatments may be accomplished through contracted services, Force Account (actions performed by agency personnel), Intergovernmental Order or Cooperative Agreement (actions performed by cooperators).

The slash generated from Fuels Management treatments (limbs, tops, small trees) would be piled for burning, chipped, masticated or similarly treated so there is no increase in in wildfire risk immediately following treatment. In all proposed treatment units where Fuels Management is an objective (treatment units may have multiple objectives, see section 2.1 for discussion), slash would be treated as described above to mitigate wildfire risk. Following treatments, these sites

will be monitored using the Missoula Field Office Prescribed Fire and Fuels monitoring protocols for effectiveness.

Stands initially selected for this treatment would be BLM-managed forested stands, within ¼ mile of a structure, according to the Montana State Library GIS (Geographic Information System) structure database (See Appendix D, map 9.9). It is possible that additional structures have been built since that data was published (version date: Dec. 2020), or vegetation may have changed since the inventory was conducted in 2014. On-site conditions may dictate a larger buffer in some places or treating along primary travel-ways and escape routes. It is anticipated that approximately 300 – 1000 acres of fuels management treatments would occur per year over the next 5 to 10 years. Following treatments, these sites will be monitored using the Missoula Field Office Prescribed Fire and Fuels monitoring protocols for effectiveness. Maintenance treatments such as follow up fuels management would be considered and implemented as needed following the initial treatment.

See Appendix E, Figure 8 for a representative stand, and Figure 11 for post-treatment example. See Appendix D. Map 9.1 for approximate locations of proposed fuels management treatments.

Timber Harvest with Prescribed Fire (Approximately 9,812 acres)

The objectives for this treatment would be to protect life, property, and firefighter safety in and near the WUI, restore healthy ecological conditions; maintain and enhance native plant communities; increase resistance and resilience to forest insects and disease, and provide local and regional economic benefits, as well as the prescribed fire treatment objectives above.

Various silvicultural systems would be used to meet the proposed action objectives depending on forest conditions existing at the specific treatment units.

Within HTG-1 – HTG-3, (approximately 8,337 acres) on Douglas-fir dominated sites uneven-aged silvicultural systems to include group selection and single tree selection would be utilized to reduce residual stocking to approximately 60 – 80 square feet of basal area per acre and reduce the mean diameter of at least 50% of the Douglas-fir in the stand to less than 10". Where western larch is present, opening size would be sufficient to recruit and sustain shade intolerant regeneration, which is generally no smaller than having a radius of one site potential tree height (SPTH) or approximately 0.72 acres in stands with 100' SPTH. This residual stand would be categorized as having a Low Douglas-fir Beetle (DFB) hazard rating, according to the DFB infestation risk management guidelines released by the US Forest Service Forest Health and Protection (USFS FHP) group (Kegley 2011). If revisions to the recommendations are made by the USFS FHP group, the newest and best information would be utilized.

On ponderosa pine dominated sites within these habitat type groups, uneven-aged silvicultural systems to include group selection and single tree selection would be utilized to randomly distribute Individuals, Clumps and Openings (ICO) across the harvest area. In this case, an individual is a tree having no other trees within roughly 20' (approximately 6 meters); clumps can be small (2-4 trees within 20' of each other) or large (5+ trees within 20' of each other), and openings are areas without trees (Churchill et all, 2013). Note that trees within clumps have interlocking crowns. Opening size would be sufficient to recruit and sustain shade intolerant

regeneration, which is generally no smaller than having a radius of one SPTH or approximately 0.72 acres in stands with 100' SPTH. Density induced tree mortality may occur within clumps where residual stocking is greatest, however at the stand level residual stocking would be reduced to < 80 square feet of basal area per acre. The treatment created openings would increase heterogeneity across the landscape and the resulting regenerated stands would increase age / size class diversity in the planning area thereby shifting conditions towards the midpoint of NRV. Due to the reduction in basal area, and resulting multi-storied stand development, this residual stand would be categorized as having a low Mountain Pine Beetle (MPB) hazard rating according to the MPB infestation risk management guidelines released by the USFS FHP group (Gibson 2004). If revisions to the recommendations are made by the USFS FHP group, the newest and best information would be utilized.

Where mortality or insect infestation already exists due to MPB, DFB, Western Spruce Budworm (WSB), or root diseases, sanitation and salvage harvests (removal of trees killed, infested or likely to be infested) would be utilized to reduce insect reproduction or the spread of root/stem diseases in the stand, and to reduce fuel loading and corresponding fire hazard within the stand. If blowdown occurs after harvest, removal of trees that are blown over would likely occur to reduce the potential for DFB, Pine Engraver (Ips Pini) (Livingston 2010, and Haavik, L. and Costanza, K., 2020) or other forest pest population increases in accordance with the Forest Product Objective 5 of the 2021, Missoula RMP (USDI-BLM 2021). These treatments would also move harvested stands toward a multi aged stand structure, which mimics stand structures developed by mixed severity fire regimes. See Appendix E, Figures 2, 3, 4 for representative stands, and figures 12, 13 and 15 for post-treatment examples.

Within HTG-4 – HTG-6, (approximately 1,476 acres) on lodgepole pine dominated sites, even-aged silvicultural systems to include shelterwood, seed tree or regeneration harvests may be used to mimic moderate – high severity and stand replacing fire regimes. Because of the WUI within the planning area, and adjacent private resources, implementing moderate to high severity prescribed burns are not an available management option in this area. For that reason, we plan to mimic these disturbances with mechanical treatment. These treatments would often retain less than 30 square feet of basal area per acre to encourage re-initiation of early seral species via natural regeneration. The treatment created openings would increase heterogeneity across the landscape and the resulting regenerated stands would increase age / size class diversity in the planning area thereby shifting conditions towards the midpoint of NRV. Increasing age and size class diversity would create or add to the mosaic effect where even aged or single species stands have developed. In addition to the shift towards midpoint of NRV, these mosaics across the landscape and improved heterogeneity within the stand would greatly reduce the planning area's susceptibility to a large scale MPB outbreak (Gibson 2004).

On mixed conifer dominated sites within HTG-4 – HTG-6, ecologically appropriate silvicultural systems would be utilized to emulate disturbance. Where western larch is present, opening size would be sufficient to recruit and sustain shade intolerant regeneration, which is generally no smaller than having a radius of one SPTH or approximately 0.72 acres in stands with 100' SPTH. A mosaic of successional stages would be distributed across the landscape to deter future landscape scale mountain pine beetle or other insect epidemics. In order to reduce the stand's susceptibility to WSB, treatment created opening size or crown spacing would be sufficient to recruit and sustain shade intolerant regeneration (Pederson et al. 2011). Where mortality or

infestation already exists due to insect or disease activity, sanitation and salvage harvests would be utilized to reduce insect reproduction in the stand, and to reduce fuel loading and corresponding fire hazard within the stand. If blowdown occurs after harvest, removal of trees that are blown over would likely occur to reduce the potential for forest pest population increases in accordance with the Forest Products Objective 5 of the 2021, Missoula RMP (USDI-BLM 2021). See Appendix E, Figure 10 for a representative stand, and figures 14 and 17 for post-treatment examples.

Within the Canada lynx habitat occurring in Lynx Analysis Units and lynx critical habitat, (generally Engelmann spruce (ES) and subalpine fir (AF) cover types within HTG 4 – HTG 6), harvest treatments would not include burning and timber harvest would be conducted to leave shrub cover (by conducting operations over snow cover) where possible. Treatments would focus on areas not currently hosting lynx foraging or denning habitat. In these stands, treatments would be designed to enhance or create dense early stand initiation foraging habitat and dense mature multistory denning habitat, in a mosaic pattern across the landscape over space and time. In areas not currently providing lynx foraging and denning habitats treatments are intended to result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx (USDI-BLM 2021).

Across all habitat type groups, in areas having sufficient regeneration of desired species as dictated by NRV, an intermediate silvicultural treatment such as thinning would be utilized to accelerate the development of larger size classes of trees and shift species composition in the overstory. The BLM would utilize naturally occurring retention groups and openings such as areas incompatible with harvesting (talus slopes, rock outcrops) and agency specified reserve areas (riparian areas, wildlife travel corridors, retention patches) to create or maintain groups and openings.

Within the Canada lynx habitat occurring in Lynx Analysis Units and lynx critical habitat, (generally Engelmann spruce (ES) and subalpine fir (AF) cover types within HTG 4 – HTG 6) where an intermediate silvicultural treatment such as thinning is proposed as described above, irregular thinning techniques such as Variable Density Thinning (VDT) (thinning which incorporates a range of stem spacings and reserve areas) or Adaptive Complexity Thinning (ACT) would be utilized. ACT is an intermediate silvicultural treatment specifically designed to restore complex structure and promote spatial complexity in homogeneous young forests (Fahey et al. 2018). See the Thinning proposed treatment section for a full description of ACT.

It is estimated that just over half (57%) of this treatment area would be skyline (cable) yarded with full or partial log suspension, while the remainder (43%) would be ground-based (tractor-skidded). Cable yarding would be used on slopes over roughly 40 percent and in all riparian protection zones. A low to mixed severity prescribed burn would follow harvest.

Species diversity and increased tree vigor are anticipated to improve resilience to disturbance and would occur as a result of harvest and burning treatments by shifting tree species composition, density and arrangement to conditions that more closely resemble the NRV. This would be accomplished by: increasing proportion and establishment of early seral species; accelerating the development of larger size classes of trees; developing multi-aged or two aged stand structures; recruiting quality wildlife habitat snags and coarse down woody debris; and

increasing patch sizes to more closely resemble natural patterns (See Appendix G. for HTG, NRV and desired conditions for all habitat types).

Across all habitat type groups, to the extent possible native deciduous trees such as Quaking aspen and black cottonwood would be maintained and enhanced for multiple resource benefits. Maintenance and enhancement actions include avoiding damaging healthy individuals during harvest unit and spur road layout as well as removing encroaching conifers and targeted prescribed burning to encourage expansion of existing populations (see Appendix F. Design Features for the Proposed Action).

It is anticipated that approximately 300 – 1000 acres of timber harvest with prescribed fire treatments would occur per year, over the next 10 – 15 years. Post-harvest monitoring would include regeneration surveys on the first, third- and fifth year following regeneration harvests, noxious weed monitoring on soils exposed from harvesting and landing operations, blowdown monitoring following severe wind events and forest pest monitoring following USFS FHP guidelines (Haavik, L. and Costanza, K., 2020). Based on regeneration surveys that are conducted, whenever possible, the BLM would plant conifers species into openings larger than approximately 20 acres in size resulting from treatment when natural regeneration does not become established to desired levels within 15 years or cannot be reasonably expected in 15 years (USDI-BLM 2021) (see Appendix F). Maintenance treatments such as follow up sanitation, salvage, prescribed burning or fuels management would be considered and implemented as needed following the initial treatment.

Generally, dead trees greater than 24 inches DBH would not be permitted to be cut for firewood unless they are within two tree lengths of an open road. An exception to this is if there is a high density of dead trees creating a public safety hazard and the needs for snag dependent wildlife habitat have been met, dead trees greater than 24 inches DBH could be harvested (USDI-BLM 2021) (see Appendix F).

See Appendix D. Map 9.1 for approximate locations of proposed timber harvest with prescribed fire treatments.

Temporary and permanent road construction.

Temporary and permanent spur road construction is proposed to enable implementation of the proposed action.

Approximately 6 miles of temporary spur roads are proposed and would be constructed to BLM engineering and design specifications. The 23 proposed temporary spur roads would range in length from .03 to .88 miles and average 0.27 miles. These temporary spur roads would be utilized for a specific treatment and would remain in place for no longer than 3 years from time of construction. Following use and at the conclusion of the treatment, all temporary roads would be obliterated or made impassable, have drainage restored and have slash and native seed applied (See Appendix E. Figure 22 for an example of temporary spur road obliteration, and Appendix F. Design Features for the Proposed Action Section 11.0.17).

Approximately 16 miles of new permanent spur roads are proposed and would be constructed to BLM engineering and design specifications, including all applicable laws, regulations, and Best Management Practices (MT-DNRC 2015). The 31 proposed permanent spur roads would range in length from 0.07 to 1.32 miles and average 0.5 miles each. These permanent spur roads would remain post-treatment for long-term land management objectives and monitoring. All proposed new permanent spur roads would be physically closed to public motorized use immediately upon construction. Physical closures include but are not limited to gates, boulders / riprap, Kelly-humps / tank-traps, or obliteration of a segment of road at its origin. Closures would be monitored via contractors, BLM employees and volunteer public who would be directed to immediately document and report any breach observed to the BLM. Upon notification of a failed closure, the BLM would take action to repair, replace or improve the closure within 30 days or as soon as conditions allow (periods of deep snow or saturated roads may delay closure repair or replacement depending on the season of discovery). As all proposed new spur roads would be closed and monitored for effectiveness, zero miles of new open motorized routes are proposed (see Appendix F Design Features for the Proposed Action).

Table 9: Proposed spur roads associated with the project.

Proposed Spur Road Type.	Number of individual proposed spur roads.	Total miles of proposed spur roads across planning area.	Range of spur road length (miles).	Average length of proposed spur roads (miles).
Temporary	23	6	0.03 - 0.88	0.27
Permanent	31	16	0.07 – 1.32	0.50

Currently un-roaded BLM managed parcels (parcels of BLM managed lands within the planning area range in size from approximately 40 acres to greater than one square mile or 640 acres) were excluded from consideration for more roadbuilding (see section 2.2 Alternatives Considered but not Analyzed in Detail) and all proposed permanent and temporary roads are near currently existing roads. According to the supplement to the Biological Assessment for this project submitted to the USFWS in June of 2022, 97.5% of proposed permanent spur roads and 93.0% of proposed temporary spur roads in NCDE Zone 1 would be located within 500 meters of existing roads and structures. In NCDE Zone 2, 95.2% of proposed permanent roads and 95.7% of proposed temporary roads would be built within the 500 m buffer area. As illustrated by the figures above, the proposed road building associated with the proposed action does not amount to lengthy new haul routes in unroaded parcels, but small spurs on existing roads to maximize the efficacy of the proposed treatments.

Table 10: Proposed spur roads within 500 meters of existing roads.

Spur road type	NCDE Zone 1	NCDE Zone 2
Permanent	97.5%	95.2%
Temporary	93.0%	95.7%

Road Maintenance

BLM controlled roads throughout the planning area would be managed in accordance with the 2021 Missoula RMP (USDI-BLM 2021) (see Section 1.3 Land Use Plan Conformance) and maintained in accordance with BLM Handbook MS 9113. Maintenance activities include blading and shaping the road surface including turnouts; stabilization or augmentation of the road surface as needed by such means as gravel or dust abatement application; maintenance and/ or replacement of drainage features including dips, ditches, culverts, catch basins and similar; maintenance or replacement of stream crossings, thinning, limbing or clearing vegetation within the clearing limits (generally the cut and fill slopes plus 5') to maintain sight distance for safe travel and as needed to maintain the road prism (defined as the driving surface plus the cut and fill slopes to the clearing limits); replacement or repair of closure devices, placement or replacement of signs, and repair of road failures such as slips, slides, slumps, sloughs and washouts. All BLM controlled roads used to transport logs would be maintained or improved to the standards found in *Best Management Practices for Forestry in Montana, as revised* (MT-DNRC, 2015). Road maintenance activities would be subject to Riparian Management Objectives as stated in Section 1.5. See Appendix F: Design Features for the Proposed Action Sections 11.0.3 and 11.0.17.

During analysis of this project, approximately 19 miles of BLM managed roads currently existing on the landscape but not included in the BLM Facility Asset Management System database (FAMS) were identified. The FAMS database would be updated upon decision to reflect these existing roads. This update is not an increase of road miles as they are currently existing but would lead to better mapping, maintenance, and upkeep by updating them in the FAMS database. No change of road closure status is proposed; therefore, zero miles of new open motorized routes are proposed.

See Appendix D. Map 9.1 for Approximate haul route and road construction locations.

Thinning (Approximately 1,567 acres)

The objective of thinning is to reduce stem densities to allow for growing space and corresponding improved tree vigor. Intermediate silvicultural practices would be implemented through thinning from below and improvement treatments where trees favored for removal would be overtopped, poor formed or poor performing individuals as well as those impacted by forest insects, disease or physical damage. Trees favored for retention would be well formed, dominant and codominant individuals as well as those expressing resistance to or no ill effects from forest insects and disease (see Appendix E, Figure 5).

Within the Canada lynx habitat occurring in Lynx Analysis Units and lynx critical habitat, (generally Engelmann spruce (ES) and subalpine fir (AF) cover types within HTG 4 – HTG 6) irregular thinning techniques such as Variable Density Thinning (VDT) (thinning which incorporates a range of stem spacings and reserve areas) or Adaptive Complexity Thinning (ACT) would be utilized. ACT is an intermediate silvicultural treatment specifically designed to restore complex structure and promote spatial complexity in homogeneous young forests (Fahey et al. 2018). ACT as is similar to low thinning (thinning from below) in that one of its purposes is to release tall, well-formed crop trees (especially the shade-intolerant species). However, this

method is distinguished by its lower height limit and its incorporation of reserves. Crop trees are selected for release at a semi-regular spacing and the largest competing neighbors are cut to reduce competition and accelerate growth, but, importantly, shade-tolerant seedlings and shrubs less than 3' (1 m) tall are retained for understory snowshoe hare cover in the short-term, and to accelerate development of multiple canopy layers over the longer term, a habitat characteristic preferentially used by both snowshoe hare and Canada lynx. ACT is also characterized by incorporation of forest reserves and is a form of irregular or variable-density thinning in this respect. These treatments would randomly distribute gaps and clumps across the treatment areas to emulate natural stand structure and for wildlife habitat benefits.

Thinning treatments are intended to result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx, by expediting the development of dense mature multistory denning habitat. Additionally, the BLM would utilize naturally occurring retention groups and openings such as areas incompatible with treatment (talus slopes, rock outcrops) and agency specified reserve areas (riparian areas, wildlife travel corridors, retention patches) to create or maintain groups and openings (USDI-BLM 2021).

Improved forest resiliency and species diversity would occur through thinning by shifting tree species composition to conditions that more closely resemble the NRV. These treatments would provide long-term reduction in hazardous fuels, an increase in individual tree diameter growth and create stands more resilient to future insect and disease outbreaks.

Trees would be manually cut with chainsaws to site specific specifications. Where Fuels Management is not an objective (often treatment units have multiple objectives, see Section 2.1 for discussion), thinned small trees would be lopped and scattered or piled so slash does not exceed a depth of 18 inches. This would result in a short-term increase in the fuel loading and associated wildfire risk. In the longer term, once the red needles fall from the thinned slash and snow loading compresses the stems (generally after the first full winter), the wildfire risk would be reduced below pretreatment levels by the reduction of ladder fuels and interlocking crowns. In proposed Thinning units where Fuels Management is an objective, thinning slash would be piled for burning, chipped, masticated or similarly treated so there is no increase in in wildfire risk immediately following treatment.

It is anticipated that approximately 300 – 1000 acres of thinning treatments would occur per year, over the next 5 -10 years. See Appendix E, Figure 9 for a representative stand, and figures 20 and 21 for post-treatment examples. See Appendix D. Map 9.1 for approximate locations of proposed thinning treatments.

*Limber Pine (**Pinus flexilis**) Enhancement (Approximately 306 acres)*

Limber pine is a native five-needled pine occurring in isolated stands within the planning area. In recent decades, limber pine populations across the region have decreased due to White Pine Blister Rust (WPBR) infection (Schwandt et al. 2013) as well as Mountain Pine Beetle (MPB) infestation (Gibson 2004). The effects of these forest insects and diseases on the population have been exacerbated by stresses from climatic shifts and fire suppression. The limber pine population within the planning area includes mature cone-bearing trees as well as advanced regeneration however the population's health overall is quite poor as documented by BLM's

forest inventory which occurred in 2014 – 2015 and subsequent field visits as well as the USFS Forest Health and Protection Entomologists and Pathologists (Haavik, L. and Costanza, K., 2020) (See Appendix E, Figure 1).

Limber Pine Enhancement treatments include stand level thinning to reduce stand density and increase residual tree growing space as well as daylighting: clearing around individual limber pine. This action would be performed manually with chainsaws or hand tools. Other enhancement treatments may include cone collection and seedling planting. These activities would be performed manually or by hand.

It is anticipated that approximately 50 – 100 acres of limber pine enhancement treatments would occur per year, over the next 5 -10 years. See Appendix D. Map 9.1 for approximate locations of proposed limber pine enhancement treatments.

See Appendix D map 9.1 for approximate location of all proposed treatments. For all of the proposed treatments, acres and locations referenced are approximate and would change slightly during project layout and implementation. While total acres for each treatment type analyzed would not be exceeded during implementation, individual treatment units are expected to be slightly different in acres and location. In most cases, individual treatment units would be smaller in size and extent due to routine features encountered in the field during layout. In some cases, they would be larger, incorporating adjacent stands with similar vegetation conditions.

See Appendix F for a complete list of Project Design Features for the Proposed Action.

Alternative 2b - Sub-Alternative

Proposed Action Objectives – same objectives and types of treatments as the Proposed Action, but fewer acres treated because this sub-alternative would not include any temporary or permanent road construction which thereby reduces the lands accessible for treatment.

The proposed types of treatments (e.g. fuels, limber pine enhancement, prescribed fire, thinning, and harvest) are the same as the Proposed Action (although reduced in acreage) and consist of a suite of 5 vegetation management treatments.

CFF Proposed Treatment Acres			
	Alternative 2	Sub. Alt. 2b	*Difference*
Treatment	**Acres**	**Acres**	***Acres***
Fuels Management	2,394	2,197	*197*
Limber Pine Enhancement	306	232	*74*
Prescribed Fire	5,068	4,194	*874*
Thinning	1,567	1,335	*232*
Timber Harvest with Prescribed Fire	9,812	6,704	*3,108*
Grand Total	**19,147**	**14,662**	***4,485***

Figure 9: Proposed Treatments in Alternative 2 versus Sub-Alternative 2b.

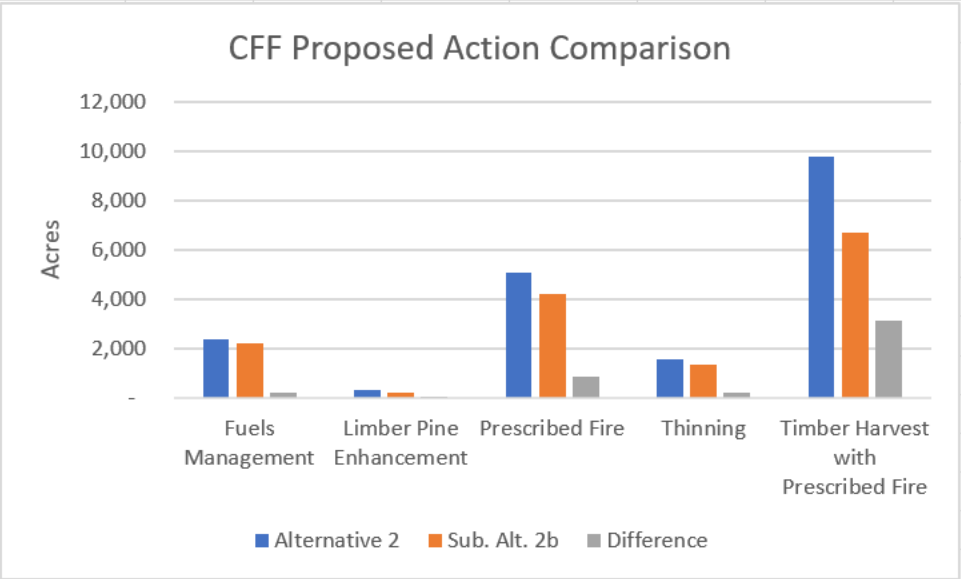


Figure 10: Proposed Treatments in Sub-Alternative 2b Alternative 2 versus Sub-Alternative 2b.

	Habitat Type Group Acres - Proposed Action Alternative 2									
Treatment	**HTG-1**	**HTG-2**	**HTG-3**	**HTG-4**	**HTG-5**	**HTG-6**	**HTG-9**	**NA**	**(blank)**	**Grand Total**
Fuels Management	519	1,200	0	212	22	32	381	20	8	2,394
Limber Pine Enhancement	102	191	12				1			306
Prescribed Fire	1,240	3,153	128	356	14	89	65	20	3	5,068
Thinning	309	867	7	356	8	19	1			1,567
Timber Harvest with Prescribed Fire	2,951	5,326	59	1,290	23	162	0			9,812
Grand Total	**5,121**	**10,737**	**207**	**2,214**	**68**	**302**	**447**	**40**	**11**	**19,147**

	Habitat Type Group Acres - Proposed Action Sub. Alt. 2b									
Treatment	**HTG-1**	**HTG-2**	**HTG-3**	**HTG-4**	**HTG-5**	**HTG-6**	**HTG-9**	**NA**	**(blank)**	**Grand Total**
Fuels Management	401	1,123	-	210	22	32	381	20	8	2,197
Limber Pine Enhancement	62	165	6	-	-	-	-	-	-	232
Prescribed Fire	978	2,611	100	353	14	59	56	20	3	4,194
Thinning	260	700	6	341	8	19	1	-	-	1,335
Timber Harvest with Prescribed Fire	2,033	3,358	38	1,133	23	119	-	-	-	6,704
Grand Total	**3,734**	**7,957**	**150**	**2,037**	**68**	**229**	**437**	**40**	**11**	**14,662**

	Acre Difference Between Alternatives									
Treatment	***HTG-1***	***HTG-2***	***HTG-3***	***HTG-4***	***HTG-5***	***HTG-6***	***HTG-9***	***NA***	***(blank)***	***Grand Total***
Fuels Management	*118*	*78*	-	*2*	-	-	-	-	-	*197*
Limber Pine Enhancement	*40*	*26*	*6*	-	-	-	-	-	-	*73*
Prescribed Fire	*263*	*542*	*28*	*3*	-	*30*	*9*	-	-	*874*
Thinning	*50*	*167*	*1*	*15*	-	-	-	-	-	*232*
Timber Harvest with Prescribed Fire	*918*	*1,968*	*22*	*158*	-	*43*	-	-	-	*3,108*
Grand Total	***1,388***	***2,781***	***57***	***177***	-	***72***	***9***	-	-	***4,485***

Figure 11: Proposed Treatments by Habitat Type Group in Alternative 2 versus the Sub-Alternative 2b.

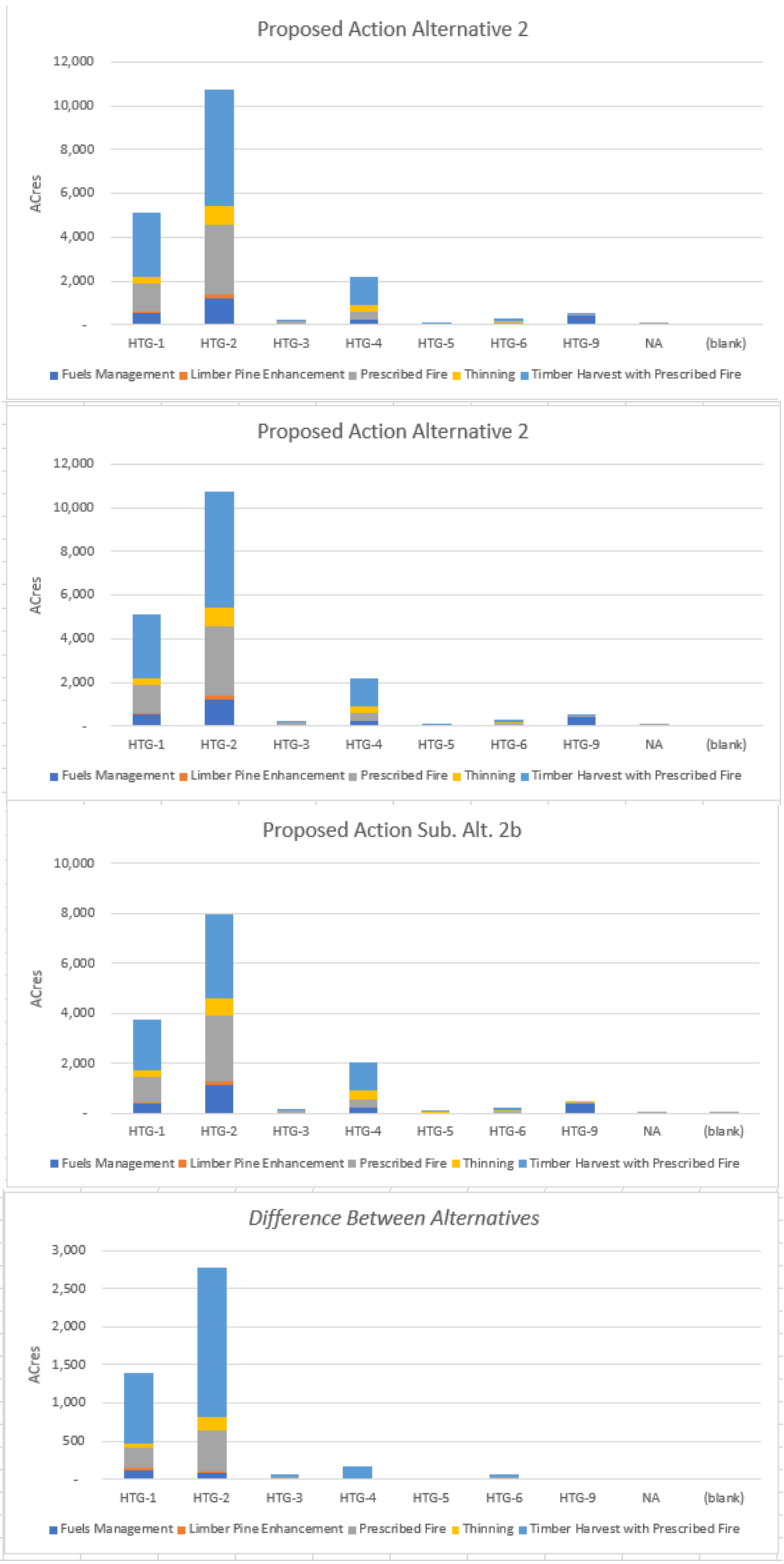


Figure 12: Proposed Treatments by Habitat Type Group in Alternative 2 versus the Sub-Alternative 2b.

As discussed in the Proposed Action, the planning area is split between two Fire Management Zones (FMZ) as established by the 2021 Missoula RMP (USDI-BLM 2021) (see Appendix D.

Fire Management Zone map 9.8). The FMZ classifications and priority treatments in the WUI and FMZ1 described above in the proposed action are the same as this sub-alternative.

CFF Proposed Treatment Acres by Fire Management Zone									
	Alternative 2			Sub. Alt. 2b			*Difference Between Alternatives*		
Treatment	**FMZ 1**	**FMZ 2**	**Grand Total**	**FMZ 1**	**FMZ 2**	**Grand Total**	***FMZ 1***	***FMZ 2***	***Grand Total***
Fuels Management	2,378	16	2,394	2,181	16	2,197	*197*	-	*197*
Limber Pine Enhancement	306	-	306	232	-	232	*74*	-	*74*
Prescribed Fire	4,981	87	5,068	4,111	83	4,193	*870*	*4*	*874*
Thinning	1,490	77	1,567	1,268	67	1,335	*223*	*9*	*232*
Timber Harvest with Prescribed Fire	9,117	695	9,812	6,094	610	6,704	*3,022*	*86*	*3,108*
Grand Total	**18,272**	**876**	**19,147**	**13,886**	**776**	**14,662**	***4,386***	***100***	***4,485***

Figure 13: Proposed Treatments by Fire Management Zone in Alternative 2 versus the Sub-Alternative 2b.

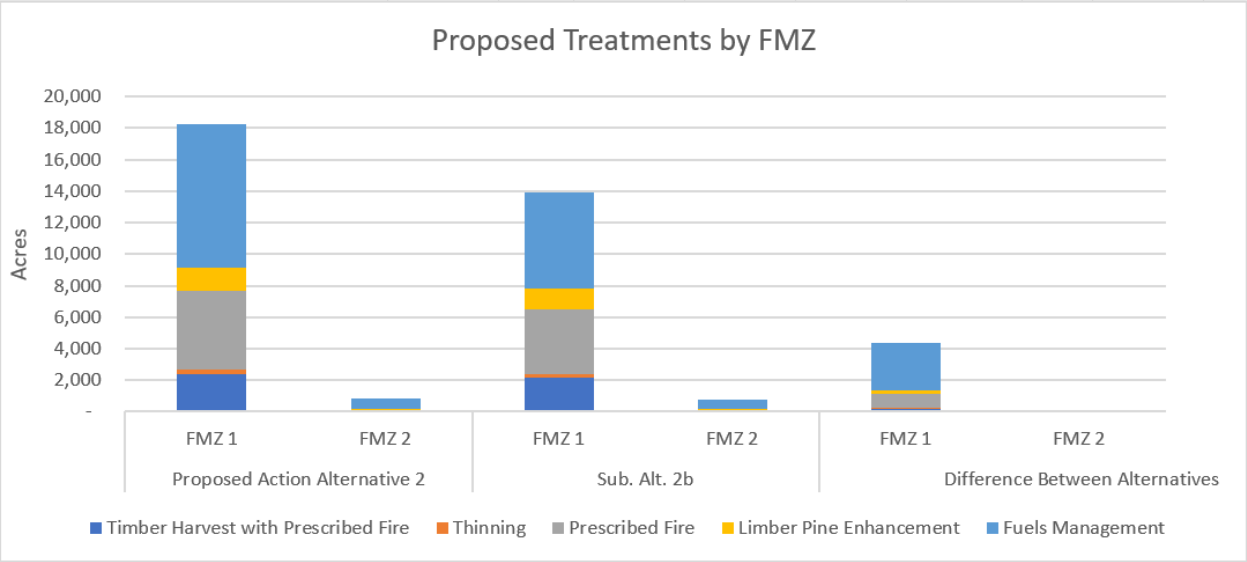


Figure 14: Proposed Treatments by Fire Management Zone in the Alternative 2 versus Sub-Alternative 2b.

Figure 14 indicates 776 acres of treatment are proposed in FMZ 2 (5% of the proposed action) under sub-Alternative. Of those, 104 acres (≈ 0.5% of the proposed action) are considered current lynx habitat as defined by the Biological Assessment for this project (Habitat Type Groups (HTG) 4, 5, or 6 and cover types that include subalpine fir or Engelmann spruce). Despite being within FMZ 2, these 104 acres are intermixed with and adjacent to private land (see Appendix D. Sub alternative Proposed Action Map 9.2 and Fire Management Zone Map 9.8) and present the same risks to life, property, and firefighter safety as forested stands in nearby FMZ 1. Similar to the proposed action, in consultation with the USFWS (Biological Opinion issued 11/8/2022) when presented with the treatments' proximity to private land, and associated risks to life, property and firefighter safety, it was agreed that these acres should be treated as WUI. In FMZ 2 where treatments occur within Canada lynx habitat within lynx analysis units, and lynx critical habitat, treatments would be designed to enhance and create dense early stand initiation forage habitat, in a mosaic pattern across the landscape over space and time. These treatments are intended to result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx, however, to the extent possible these treatments would only be applied in areas not currently providing lynx foraging and denning habitats (USDI-BLM 2021).

Prescribed Fire Treatments (Approximately 4,194 acres)

Like the proposed action, the objectives for and design of the prescribed fire treatments are to protect life, property and firefighter safety in and near the WUI and promote resilience to unnaturally intense wildfire by reducing forest fuel loading, to create or maintain early seral conditions, and to create seedbeds to encourage natural regeneration. The design and techniques are the same as described above in the proposed action.

Within in HTG-1 – HTG-3, (approximately 3,689 acres) in Douglas-fir and ponderosa pine cover types, burns would be intended to reduce small diameter conifers by 50 to 75%, while keeping mortality in the medium to large trees at less than 10%, reduce duff to less than 40 percent from present levels, and increase mineral soil exposure less than 10 percent. In western larch cover types the burns would be intended to increase mineral soil exposure by at least 50% to create favorable seedbeds for western larch regeneration, while keeping mortality in the medium to large trees at less than 20%.

Similar to the proposed action, prescribed burning would not occur in current lynx habitat as defined by the Biological Assessment for this project (Habitat Type Groups (HTG) 4, 5, or 6 and cover type that include subalpine fir or Engelmann spruce). When not in lynx habitat, within HTG-4 – HTG-6, (approximately 426 acres) in lodgepole pine cover types, the burns would be intended to increase mineral soil exposure by 20-50% to create favorable seedbeds for lodgepole pine regeneration. Within mixed conifer cover types, burns would be intended to reduce small diameter conifers by 50 to 75%, while keeping mortality in the medium to large trees at less than 20%, reduce duff to less than 40 percent from present levels, and increase mineral soil exposure less than 20 percent. In western larch cover types the burns would be intended to increase mineral soil exposure by at least 50% to create favorable seedbeds for western larch regeneration.

Across the planning area approximately 78 acres of the proposed prescribed fire treatment are within HTG-9 or have no HTG assigned. Treatments as described above would be applied as appropriate based on-site conditions.

Similar to the proposed action, control lines may be used on all or portions of prescribed fire unit boundaries except no new road construction for administrative only use would occur. These control lines may be existing roads, trails, rock scree, or constructed fire lines. Fire lines may be constructed by hand, machines, or using fire line explosives. Existing roads and trails accessing these units would be maintained for use during implementation. It is anticipated that approximately 300 – 1000 acres of prescribed fire treatments would occur per year, including post-harvest burning over the next 10 – 15 years. Following treatments, these sites would be monitored using the Missoula Field Office Prescribed Fire and Fuels monitoring protocols for effectiveness. Maintenance treatments such as follow up prescribed burning would be considered and implemented as needed following the initial treatment.

Similar to the proposed action, prescribed burning operations would follow procedures and standards developed by the Montana Idaho Airshed Group to ensure adequate smoke dispersal in order to prevent deterioration in air quality.

See Appendix E, Figure 6 for a representative stand image and Figures 18 and 19 for implementation examples. See Appendix D. Map 9.2 for approximate locations of proposed prescribed fire treatments. See Appendix F. Design Features for the Proposed Action, 11.0.19 Smoke Management.

Fuels Management Treatments (Approximately 2,197 acres)

Like the proposed action, the objectives of and means to accomplish the Fuels Management Treatments are to protect life, increase the safety of firefighters, and protect property, improvements, and infrastructure. The design and conditions would be the same as the proposed action.

Like the proposed action, stands initially selected for this treatment are BLM forested stands, within ¼ mile of a structure, according to the Montana State Library GIS (Geographic Information System) structure database (See Appendix D, map 9.10). It is possible that additional structures have been built since that data was published (version date: Dec. 2020), or vegetation may have changed since the inventory was conducted in 2014. On-site conditions may dictate a larger buffer in some places or treating along primary travel-ways and escape routes. It is anticipated that approximately 300 – 1000 acres of fuels management treatments would occur per year over the next 5 to 10 years. Following treatments, these sites would be monitored using the Missoula Field Office Prescribed Fire and Fuels monitoring protocols for effectiveness similar to the proposed action.

See Appendix E, Figure 8 for a representative stand, and Figure 11 for post-treatment example. See Appendix D. Map 9.2 for approximate locations of proposed fuels management treatments.

Timber Harvest with Prescribed Fire (Approximately 6,704 acres)

Like the proposed action, the objectives for this treatment are to protect life, property, and firefighter safety in and near the WUI, restore healthy ecological conditions; maintain and enhance native plant communities; increase resistance and resilience to forest insects and disease, and provide local and regional economic benefits, as well as the prescribed fire treatment objectives above.

The timber harvest with prescribed fire is the same as the proposed action except fewer acres due to no proposed new road construction. Within HTG-1 – HTG-3, (approximately 5,429 acres) and Within HTG-4 – HTG-6, (approximately 1,275 acres) the silvilcultural practices are the same as described above in the proposed action. Zero acres of timber harvest with prescribed fire are proposed in HTG-9, NA or Blank in either the Alternative 2 or the Sub-alternative.

It is estimated that just under half (45%) of the treatment area would be skyline (cable) yarded with full or partial log suspension, while the remainder (55%) would be ground-based (tractor-

skidded). Cable yarding would be used on slopes over roughly 40 percent and in all riparian protection zones. A low to mixed severity prescribed burn would follow harvest.

Species diversity and increased tree vigor are anticipated to improve resilience to disturbance and would occur as a result of harvest and burning treatments by shifting tree species composition, density and arrangement to conditions that more closely resemble the NRV. This would be accomplished by: increasing proportion and establishment of early seral species; accelerating the development of larger size classes of trees; developing multi-aged or two aged stand structures; recruiting quality wildlife habitat snags and coarse down woody debris; and increasing patch sizes to more closely resemble natural patterns (See Appendix G. for HTG, NRV and desired conditions for all habitat types).

Across all habitat type groups, to the extent possible native deciduous trees such as Quaking aspen and black cottonwood would be maintained and enhanced for multiple resource benefits. Maintenance and enhancement actions include avoiding damaging healthy individuals during harvest unit and spur road layout as well as removing encroaching conifers and targeted prescribed burning to encourage expansion of existing populations (see Appendix F. Design Features for the Proposed Action).

It is anticipated that approximately 300 – 1000 acres of timber harvest with prescribed fire treatments would occur per year, over the next 10 – 15 years.

See Appendix D. Map 9.2 for approximate locations of proposed timber harvest with prescribed fire treatments.

Temporary and permanent road construction.

No new temporary or permanent roads would be constructed under the sub-alternative; rather, only currently existing roads would be utilized.

Road Maintenance

Similar as the Proposed Action BLM controlled roads throughout the planning area would be managed in accordance with the 2021 Missoula RMP (USDI-BLM 2021) (see Section 1.3 Land Use Plan Conformance) and maintained in accordance with BLM Handbook MS 9113. Maintenance activities include blading and shaping the road surface including turnouts; stabilization or augmentation of the road surface as needed by such means as gravel or dust abatement application; maintenance and/ or replacement of drainage features including dips, ditches, culverts, catch basins and similar; maintenance or replacement of stream crossings, thinning, limbing or clearing vegetation within the clearing limits (generally the cut and fill slopes plus 5') to maintain sight distance for safe travel and as needed to maintain the road prism (defined as the driving surface plus the cut and fill slopes to the clearing limits); replacement or repair of closure devices, placement or replacement of signs, and repair of road failures such as slumps, sloughs and washouts. All BLM controlled roads used to transport logs would be maintained or improved to the standards found in Best Management Practices for Forestry in Montana, as revised (MT- DNRC, 2015). Road maintenance activities would be subject to Riparian Management Objectives as stated in Section 1.5. See Appendix F: Design Features for the Proposed Action Sections 11.0.3 and 11.0.17.

During analysis of this project, approximately 19 miles of BLM managed roads currently existing on the landscape but not included in the BLM Facility Asset Management System database (FAMS) were identified. The FAMS database would be updated upon decision to reflect these existing roads. This update is not an increase of road miles as they are currently existing but would lead to better mapping, maintenance and upkeep by updating them in the FAMS database. No change of road closure status is proposed; therefore, zero miles of new open motorized routes are proposed.

See Appendix D. Map 9.2 for Approximate haul route and road construction locations.

Thinning (Approximately 1,335 acres)

Like the proposed action, the objective of thinning is to reduce stem densities to allow for growing space and corresponding improved tree vigor. The silvilcultural practices are the same as described above in the proposed action.

It is anticipated that approximately 100- 300 acres of thinning treatments would occur per year, over the next 5 -10 years. See Appendix E, Figure 9 for a representative stand, and figures 20 and 21 for post-treatment examples. See Appendix D. Map 9.2 for approximate locations of proposed thinning treatments.

*Limber Pine (**Pinus flexilis**) Enhancement (Approximately 232 acres)*

Limber pine discussed above in the proposed action is the same as this sub-alternative.

Under this sub-alternative, it is anticipated that approximately 20 - 50 acres of limber pine enhancement treatments would occur per year, over the next 5 -10 years. See Appendix D. Map 9.1 for approximate locations of proposed limber pine enhancement treatments.

See Appendix D map 9.2 for approximate location of all proposed treatments.

See Appendix F for a complete list of Project Design Features for the Proposed Action.

Alternatives Considered but not Analyzed in Detail

Alternative to treat 100% of BLM managed land within the planning area.

An alternative was considered to treat all 23,666 acres (100%) of BLM managed lands within the planning area. Through scoping, analysis and consultation approximately 4,519 acres (19%) of BLM managed land within the planning area were considered for treatment but deferred due to concerns over road building on excessively steep slopes, road building within Riparian Habitat Conservation Areas (RHCA) in Bull Trout Critical Habitat, access across USFS and private lands, or to maintain un-roaded, secure habitat characteristics, especially for grizzly bears. See Appendix E, Figure 7 for a representative stand with no treatment proposed, and maps 9.1 and 9.2 for the Alternative 2 and Sub-alternative 2b respectively.

Alternative to exclude commercial harvest or logging.

An alternative to exclude all commercial harvest was considered but failed to meet the purpose and need of the project as stated in Section 1. Specifically, this alternative does not provide local and regional economic benefits through harvest of forest products. Additionally, the revenue generated through the sale of forest products reduces the cost of treatments to the agency and the taxpayers. It also provides an opportunity for other public benefits like road maintenance and improvement making commercial harvest of suitable stands the most appropriate tool for those sites where proposed.

This alternative is also less effective at achieving the other objectives of the project, specially to restore healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV, and to improve ecological health by increasing resistance and resilience to forest insect and disease outbreaks. Were the BLM to attempt to achieve the objectives of this project without utilizing commercial timber harvest, our ability to manipulate the overstory stand structure would be greatly reduced which in turn would hamper our ability to move the stands toward midpoint of NRV (See appendix G for current condition versus desired conditions within NRV). Additionally, we would lose our ability to implement the most effective combination of treatments: mechanical plus prescribed burning as determined in the National Fire Surrogate Study (Schwilk et al. 2009):

> *Across the network, mechanical treatment was generally more effective at manipulating overstory stand structure than was burning. [Where], the objective is to produce a stand structure that is more resilient to disturbances such as bark beetle outbreaks, and closer to what existed historically, mechanical treatments may achieve these objectives.*
>
> *Mechanical treatments followed by burning produced the strongest result at most sites, with more resilient forest structures (lower density in the West, greater reduction in subcanopy hardwoods in the East), lower surface fuel loads, and reduced rate of accumulation of surface fuels. If burning alone were the only management option, additional burns might over time reduce tree densities and fuel loading, but the mechanical plus burning treatments achieved this condition more rapidly.*
>
> *Overall, the desired response of the ecological variables presented in this paper to fuel treatments involving burning and/or mechanical treatments was generally maximized by the combined mechanical plus burning treatments. These treatments produced desired changes in stand structure, while reducing surface fuel loading and rate of fuel accumulation in the near-term, and also increasing native understory herbaceous species diversity.*

Fuels reduction and understory treatments alone would not effectively address the threat of forest insect outbreaks that exist in the stands. From the Insect and disease assessment on the Clark Fork Face Project Area by the USFS Northern Region, Forest Health Protection (Haavik and Costanza 2020):

To reduce DFB (Douglas-fir beetle) hazard, larger trees (≥14") should be removed (i.e., thin from above). Trees with extensive top-kill or branch dieback from WSB (Western spruce budworm) should also be removed because they will be more susceptible to disturbance in the future and will also contribute to mortality in the understory Douglas-fir. A thinning would reduce tree-to-tree competition and should improve growth rates for the remaining, apparently healthy trees. It will also reduce the age of the stand, reducing susceptibility to root diseases that favor mature fir, like Schweinitzii.

Because this alternative is less effective at restoring healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV and improving ecological health by increasing resistance and resilience to forest insect and disease outbreaks and does not provide local and regional economic benefits through harvest of forest products, it has not been selected for detailed analysis.

Alternative to exclude harvest of old growth forests.

An alternative to exclude harvest of old growth forest was considered based on external scoping and public comments received.

Although the 2021 Missoula FO RMP (USDI-BLM 2021) does not identify or define old growth, it does include management direction regarding mature forests:

> FV-MA-3. Maintain and create mature forest conditions through active treatment and restoration activities. Design actions to develop stand structures that are relatively complex with variable tree densities, diverse understory composition, and abundant snags and downed logs. Where deficient on the landscape, create snags and down woody material for wildlife habitat.
>
> FV-MA-8. Strive to maintain or create the quantity of mature (late-successional) forest structure that is consistent with NRV for a given habitat type group to maintain or enhance habitat for species dependent upon mature forest structures. Location of these stands would shift across the landscape over time.

Eliminating harvest in all mature (late-successional) forest structures in an alternative would be arbitrary and would not meet the purpose and need for action.

Simplistic methods to exclude old trees from management such as diameter limits on harvesting fail to account for the other components of mature forests such as complex structure, diverse understories, snags and down woody material. Through management and selective harvesting, these components can be developed by increasing light and resource availability in the lower canopy thereby encouraging understory development, snag creation and down material placement with harvesting equipment.

The proposed action has been designed to meet this RMP direction, with the current and desired conditions illustrated in the Environmental Effects of the Proposed Action (Section 3.2.3, figures 7 - 12) as well as Appendix G (Natural Range of Variability Tables by Habitat Type Group). Were the BLM to prohibit management of mature forests, the project would fail to meet the direction of the 2021 Missoula FO RMP (USDI-BLM 2021).

Along with moving the stands towards the midpoint of NRV as described above, an objective of the project is to improve ecological health by increasing resistance and resilience to forest insect and disease outbreaks. Across the project area dense, even-aged homogeneous stands which lack diversity present a high risk of infestation and mortality from insects such as Douglas-fir beetle (Kegley 2011). An alternative that prohibits management of these stands would fail to meet the purpose and need of the project.

Thus, this alternative was dropped as it failed to meet the Purpose and Need of the project to move forests towards the midpoint of NRV and increase resistance and resilience to forest and disease outbreaks or the management direction of the 2021 Missoula FO RMP (USDI-BLM 2021).

3 Affected Environment and Environmental Consequences

General Setting

The planning area extends approximately 5 – 50 miles east of Missoula, MT in the Clark Fork River sub-basin in west central Montana. The planning area totals approximately 247,191 acres, with a mix of ownerships including BLM (10%); US Forest Service (USFS) (1%); The Nature Conservancy (TNC) (12%); Montana Department of Natural Resources and Conservation (DNRC) (21%); the University of Montana (UM) (1%); small individually owned private (48%) and Stimson Lumber Company (8%). For this project, forest restoration and fuels reduction treatments are proposed on BLM managed lands only, within the planning area. Table 1 in Section 1 displays the mix of land ownership in the planning area. See Appendix D, Map 9.0 for a planning area location and land ownership map.

Decades of fire suppression and past management activities in the planning area have resulted in current conditions that are deviated from the Natural Range of Variability (NRV) when measured by tree species composition, density and age class distribution. This deviation from the NRV results in high susceptibility to forest insect and disease outbreaks, high fuel loading and high potential for uncharacteristic wildfire.

Coupled with the deviated and unhealthy state of the BLM forested stands, the private land in the planning area has experienced subdivision and rural development in the past decades. What was once largely industrial forest ownership is now overwhelmingly (48% of the planning area) small, nonindustrial private landowners who are constructing homes and buildings in the forest. This subdivision and rural development have effectively transitioned the entire planning area to Wildland-Urban Interface (WUI) when measured as a proximity to structures. Because of this shift in ownership and use of the private land, the BLM's forested parcels represent an increased risk from wildfire to the private structures and improvements and also to the safety of the residents and firefighters.

Methodology and Assumptions

A comparison will be made between current conditions and what is considered to be a natural range of variability (NRV) to describe the affected environment and to develop desired conditions for forest vegetation within the planning area. NRV was developed by using "Historical Vegetation of Montana" (Losensky 1997) as a basis for understanding ecologically sustainable conditions. Current conditions were determined by using data collected within the planning area (BLM forest inventory 2014 – 2015 as well as subsequent field visits).

Natural range of variability (NRV) is a spectrum of ecological vegetative states, and the spatial and temporal variation in these states. Modeling was used to develop a quantified estimate of the NRV for the planning area and knowledge of historical conditions helped corroborate the model results. Historical conditions were established based on the "Historical Vegetation of Montana" (Losensky 1997). Current conditions were determined by using data collected within the planning area by BLM personnel conducting forest inventory plots as well as photo interpretation. Managing forest ecosystems within their NRV will sustain native species and

biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994).

Resource Issue 1

Issue 1 – How will the Proposed Action impact forest vegetation in the context of wildfire resiliency, forest fuel loading, firefighter safety, NRV and forest vegetation resistance and resilience to forest insects and disease outbreaks?

Affected Environment

Prior to Euro-American influence in the Clark Fork Face planning area, the composition, structure and density of the vegetation was a result of natural disturbance processes including indigenous people's activities, and succession. Since that time, land use practices such as timber harvest, road construction, urban development, livestock grazing, and fire exclusion have altered the conditions of upland vegetation. Land use and land management practices and policies that have functionally suppressed fire in the affected landscape have had profound effects on many ecological communities, ecosystem processes, and the biodiversity which is dependent on a fire-influenced native condition.

Fire has been important in shaping vegetation structure and composition in the Interior Columbia Basin for thousands of years and was the dominant disturbance process which historically sustained forest ecosystems and biodiversity at the watershed scale (Johnson et al 1994). Many anecdotal and scientific reports have documented the widespread occurrence of fire throughout the region. The causes of these fires were both natural and human caused. Lightning caused fires during the summer months were abundant and spread across the landscape according to fuels, weather, and topography. Native Americans purposefully ignited fires for thousands of years for a multitude of reasons including food gathering, clearing migration routes, hunting large game, enhancing plant resources, and fighting battles (Pyne 2001). These fires were mostly surface fires that maintained low and variable tree densities, light and patchy ground fuels, simplified forest structure, and favored fire-tolerant trees such as ponderosa pine, Western larch and lodgepole pine and a low and patchy cover of associated fire-tolerant shrubs and grasses (Hessburg et. al 2005). Based on historical accounts (Arno 1980, Gruell 1983, Wellner 1970) and recent fire-scar studies (Agee 1993, Agee 1998, Agee 2004, Fischer and Bradley 1987, Arno et al. 1997, Arno et al. 1995, Barrett 2004), fire in the planning area was a relatively frequent disturbance event prior to Euro-American settlement.

Fire also provided other important feedbacks and effects to the forest landscape. For example, frequent surface fires favored fire tolerant trees such as western larch by periodically exposing patches of mineral soil which larch seed needs to successfully germinate. They maintained fire tolerant forest structures by elevating tree crown bases and scorched or consumed many seedlings, saplings, and pole-sized trees. The fires cycled nutrients from branches and foliage to the soil where they could be used by other plants and promoted the growth and development of low and patchy understory shrub and forb vegetation. Surface fires reduced the long-term threat of large-scale running crown fires by reducing the fuel bed and metering out individual tree and group torching, and they reduced competition for site resources among surviving trees, shrubs, and herbaceous cover (Hessburg et al 2005).

As a result of timber harvest associated with European-American settlement and mining activities that took place in the Clark Fork Face planning area in the late 1800s and just after the turn of the 20th century (1920's), many large trees were removed. The checkerboard pattern of ownership in the planning area is a result of a railroad land grant from the General Land Office to the Northern Pacific Railroad to build a northern transcontinental railroad route. They were granted every other section along a 50-mile buffer of the proposed route. These lands then were sold to The Anaconda Company, who sold to Champion International, who sold to Plum Creek Timber Company, who sold to Stimpson Lumber Company who finally sold to TNC. These industrial private forest lands account for about half the planning area, and do not have very many large or very large trees on them.

Fires continued to play an important role in shaping the landscape until the 1940's, when fire suppression was effective enough to limit the role of natural fire throughout the region (Pyne, 1982). Currently the role of wildfire is very limited in the planning area, due in part to the policy of full fire suppression that has been in effect since 1921. The Blackfoot Fire Protection Association (BFPA) was formed in that year and provided forest fire protection to approximately 1.2 million acres of private, state, and federal land, including all of the lands within the planning area. Over five decades, the BFPA built a system of roads, trails, and lookouts that made the organization highly effective in suppressing most fires at less than 10 acres in size. In 1970, the BFPA transitioned fire suppression responsibilities to the State of Montana Department of Natural Resources and Conservation (MT DNRC). Since 1921, very few fires escaped initial attack or affected any major vegetation change within the planning area until 2000. The last two decades we have seen several significant fires escape initial attack including the Ryan Gulch Fire in 2000 (17,100 acres), Dirty Ike Fire in 2003 (824 acres), the Packer Gulch Fire in 2006 (3,059 acres), the Mile Marker 124 Fire in 2007 (6,493 acres), the Felan Gulch in 2012 (177 acres), the Nimrod Fire in 2013 (603 acres), and the Anderson Hill Fire in 2021 (745 acres). Combined these fires have burned 25,440 acres or 10 percent of the planning area, and 684 acres or 3 percent of BLM lands in the planning area. See Appendix D, Map 9.12 fire history map for location and extent of fires.

Regarding wildfire, in the journal article: *Are High-Severity Fires Burning at Much Higher Rates Recently than Historically in Dry-Forest Landscapes of the Western USA?* Baker, 2015 states, "that high severity fire is generally operating at or below historical rates" and that "the ecological importance of large, infrequent, and often severe natural disturbances in structuring historical landscapes and maintaining their biological diversity is well established". Further he states, "the best approach for high severity fire is likely though wildland fire use, managed by professional fire personnel, with restoration and maintenance of high-severity fire within historical rates and patterns as a goal". Unfortunately, however, this landscape does not lend itself well to managed wildfires, due to the mixed ownership, and influx of residences and improvements in the area. To that end Baker states, "Land managers and the public can reduce fire risk near housing, infrastructure, and valuable resources to maximize area available for wildland fire use across adjoining lands". This approach is directly relatable to the 3 Fire Management Zones established by the 2021 Missoula RMP (USDI-BLM 2021).

The planning area is located in two Fire Management Zones (FMZ) as established by the 2021 Missoula RMP (USDI-BLM 2021). The FMZ classification is used to guide and prioritize wildfire response and fuels management. FMZ 1 is characterized as having a high instance of values at risk, or areas at high risk of catastrophic fire due to current vegetation conditions, where an unplanned wildland fire is likely to cause negative effects. These lands are within and adjacent to the WUI, intermingled with private and state lands, and contain important cultural, recreational, economic, or biological resources. FMZ 2 is generally further from values at risk, where wildland fire is desired to manage ecosystems, but constraints (such as private inholdings) limit the use of wildland fire. Within FMZ 2, the full range of fuels treatments including mechanical, manual and prescribed fire on lands in this category will be important to the success of wildland fire management. Most of the BLM lands in the planning area are in FMZ 1 (22,601 or 96%), while 1,064 acres or 4% are in FMZ 2 (See Figure 3 in section 2.1 and Appendix D, Map 9.8).

These past management practices have resulted in accumulations of surface and canopy fuels which have increased the potential for large scale high severity fires (Mutch et al. 1993; Kolb et al. 1998; Keane et al., 2002; Stephens and Ruth, 2005). Because productivity exceeds decomposition in most of the west, surface fuels tend to increase in the absence of disturbance. Tree seedlings, saplings, and fire-sensitive shrubs have become more common and thereby have increased understory fuel loadings. In most coniferous forests, canopy fuels also increase and become more available without disturbance as more shade tolerant trees become established in the understory and overstory (Keane et al., 2002), which is the case within much the planning area. In the absence of fire, Douglas-fir seedlings and saplings have become established and are proliferating in the understory of stands having an overstory of Douglas-fir, ponderosa pine and/or western larch. This has, in effect, created a fuel ladder for fire to easily transition from a low to moderate intensity surface fire into a high intensity crown fire. In many locations across the planning area, the risk of large-scale high severity wildfire and insect and disease infestation has steadily increased due to fire suppression and past management. The State of Montana's recent risk assessment for the Montana Forest Action Plan clearly illustrates these conditions across the planning area. Their Priority Areas for Focused Attention includes 87,780 acres, 35% of the planning area due to wildfire risk, distance to WUI, and insect and disease risk. 11,158 of these acres are on BLM. See Appendix D, Map 9.11 for location.

Historic fire regimes of the Clark Fork Face planning area have and continue to be directly and indirectly altered by human actions. As previously described, Native Americans interacted and influenced this landscape for thousands of years using fire, and those influences are incorporated into the fire history of the area. It is the extent of human influence over the last 100 years that is of primary concern when considering the cumulative impacts to fire regimes in the planning area. Domestic livestock grazing, commercial logging, road and rail construction, urbanization, and rural development all have contributed to the direct or indirect exclusion of fires (Hessburg et al 2005). In particular, land conversion to residential and urban development are obvious changes. Many of the former Stimpson lands have been sold into private ownership. Relatively dense subdivision development in the planning area has occurred in the lower areas of several drainages near the Clark Fork River including Wallace Creek, Kendal Creek, Donovan Creek, and Cramer Creek. In addition to these areas with more concentrated structures, there are numerous residences and structures dispersed on private lands throughout the planning area (see

Appendix D Maps 9.9 and 9.10). These subdivisions and structures and a buffer around them make up the WUI for this project.

The planning area contains three counties which each have their own Community Wildfire Protection Plans (CWPP). These county level CWPPs are directly tied to the Healthy Forests Restoration Act of 2003 (HFRA). The HFRA effort asked communities to assume a greater role in identifying lands for priority fuels reduction treatment and proposed treatment recommendations. Each CWPP has been completed in different years (Missoula 2018, Powell 2021, and Granite 2005), and each one defines WUI slightly different. Some of the older CWPPs do not have recent development in their WUI layers. The 2021 Missoula RMP incorporated the CWPP WUI layers. According to the RMP, about 70% of the CFF planning area is considered WUI (175,830 acres) and 5,064 of those acres occur on BLM lands (24%). In order to pick up newer development in the WUI, we used the 2020 Montana Structure Framework from Montana State Library, which we buffered by a ¼ mile to develop the proposed fuels management treatments (Appendix D Maps 9.9 and 9.10). The Missoula County CWPP recognizes critical egress areas in the following drainages: Cramer Creek, Wallace Creek, and Donovan Creek. The Missoula Ranger District of the Lolo National Forest is working to develop an all-lands focused fuels and forest resiliency project called Wildfire Adapted Missoula (WAM). The CFF planning area includes 62,268 acres of WAM, or about 25% of the planning area. 1,311 of the WAM boundary covers BLM, mostly in the Wallace Creek drainage (See Appendix D, Map 9.11).

Reducing wildfire risk to communities is not a one-size-fits-all approach. There is no one single action/treatment to reduce risk, but rather multiple actions working in concert because multiple factors influence wildfire risk. According to wildfirerisk.org, reducing wildfire risk can be done by addressing nine different things: land use planning, evacuation and readiness, equitable risk reduction, smoke readiness, ignitions prevention, ignition-resistant homes, response, hazardous fuels management, and recovery and rebuilding (wildfirerisk.org). The importance and amount of each one of these depends on location and situation, but all the factors play a role in wildfire risk reduction. Each entity (private, state, local, federal) that is involved in a particular landscape has authorities and jurisdiction to address some of each of these factors, and cooperation toward the common goal is critical. For example, land use planning in the CFF planning area so that people build in a fire-resistant way is a county action/responsibility. Building ignition-resistant homes is a private individual responsibility, and wildfire response is a state (MT DNRC) responsibility. Reducing hazardous fuels on BLM jurisdiction is the BLM's responsibility. The stakeholders (County, State, Federal, Private, NGO) must work together to address all the factors since no single agency or entity can.

To increase the efficacy of fuels treatments proposed for BLM lands in the planning area, the BLM has also moved to address the hazards present on private lands and adjacent to homes. As of summer 2022, the BLM Western Montana District entered into a Cooperative Agreement with the MT DNRC wherein BLM Community Assistance funds are made available for fuels reduction work on private lands in the CFF planning area (as well as other areas under other agreements). The Agreement term is five years with an option to extend, and it is currently funded at $100,000 with opportunity up to $500,000. In November of 2022, the MT DNRC Forestry Assistance Bureau began targeted outreach, sending flyers and conducting site visits in the Wallace Creek drainage near the community of Clinton, MT. As of mid-2023, 6 homeowners

in that community and expressed interest or intent to utilize the funding for fuels reduction work on their land. This is considered a reasonable response to the first outreach effort, and interest is expected to increase once the success of the program can be demonstrated. For example, in the Blackfoot River drainage directly north of the CFF planning area, the BLM has an established Community Assistant Agreement with the Blackfoot Challenge (BC) for the same work on private land. Under the BC agreement 627 acres have been treated, protecting 214 properties since 2019. We expect the CFF Community Assistance to have similar performance once people gain awareness of it in this area. It is the intent of the BLM and MT DNRC to continue targeted outreach and progressing through the planning area one community or subdrainage at a time until most or all landowners in the planning area have been contacted, and it is recognized that this may require additional agreements in the future. By utilizing the Cooperative Agreement with the MT DNRC and providing Community Assistance funds, the BLM is facilitating and providing opportunity for fuels reduction on private lands across ownership boundaries throughout the planning area.

A comparison will be made between current conditions and what is considered to be a natural range of variability (NRV) to describe the affected environment and to develop desired conditions for forest vegetation within the planning area. NRV was developed by using "Historical Vegetation of Montana" (Losensky 1997) as a basis for understanding ecologically sustainable conditions. Current conditions were determined by using data collected within the planning area (BLM forest inventory 2014 – 2015 as well as subsequent field visits). Managing forest ecosystems within their natural range of variability (NRV) would sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). The concept of managing forests to move towards or remain within their NRV was utilized to create desired conditions for the Clark Fork Face planning area. Historic conditions provide insight for understanding the set of conditions and processes that sustained ecosystems and biodiversity in the past and provides a reference against which to evaluate current ecosystem change. Recognizing that historic conditions are a single point in time and may not be an attainable goal given current conditions and climactic uncertainties, historic conditions were used provide a context for evaluating current ecosystem conditions, identifying departures and associated risks to ecosystem components, and were used to develop the desired conditions. Desired conditions address size class and structural distributions and tree-stocking levels across the CFF landscape as a strategy to minimize forest vulnerability to stressors consistent with disturbances expected under current and future climates (www.adaptationpartners.org). Managing vegetation in the face of uncertainty requires a variety of approaches and strategies that are focused on enhancing ecosystem resistance and resilience. Overall, desired future conditions reflect what are ecologically sustainable conditions.

In order to describe and contrast differences between present conditions, NRV and desired conditions, forest vegetation in the planning area was divided into broad habitat type groups (HTGs) and a description and comparison of conditions was completed for each group. HTGs are groupings of similar habitat types. Habitat types are an aggregation of ecological sites of like biophysical environments (such as climate, aspect, elevation and soil characteristics) that produce plant communities of similar composition, structure, and function. The vegetation communities that would develop over time, given no major natural or human disturbances—the climax plant community—would be similar in a specific habitat type. Existing vegetation

condition (cover type) in a given habitat type can and does vary widely, reflecting each site's unique history, forest character, pattern of disturbances, and point in time along successional pathways. Habitat types are described in detail in Forest Habitat Types of Montana (Pfister et al. 1977). Differences between current and the NRV and a description of desired conditions are summarized below by habitat type group and are displayed in more detail in Appendix G.

Habitat Type Group 1: Warm Douglas-fir (approximately 6,085 Acres, 26%)

These are low elevation dry sites that support ponderosa pine on the driest sites and Douglas-fir on the moister sites in this group. Prior to disruption of the natural fire regime, bunchgrasses dominated the understory and tree density was low (Green et al., 1992, errata 2008). Fires were generally frequent and non-lethal with a relatively uniform pattern. Average fire frequency ranged between 5 and 25 years (Fischer and Bradley, 1987). Pre-suppression composition and structure was typically open, park-like, multi-storied and multi-aged stands of ponderosa pine with lesser amounts of Douglas-fir. The frequent low severity fires maintained open stand conditions by removing understory shrubs and selectively thinning understory trees. Prior to disruption of the natural fire regime, diseases and insects (bark beetles and root diseases) caused scattered individual and occasional group mortality.

Fire suppression efforts have successfully excluded fire for several natural fire cycles. This has resulted in the warm and dry Douglas-fir habitat types being dominated by increased Douglas-fir composition and density with marked changes in forest structure. Dominant species composition has shifted away from ponderosa pine toward more shade tolerant Douglas-fir. The amount of area in a very large size class (> 21" DBH trees) has been reduced from historic ranges. Seedling / sapling, pole (5.1" – 9" DBH), Medium (9.1"-15") and large (15.1"- 21") tree size classes exceed historic ranges. Historic open uneven aged stand structures are currently under-represented and have been replaced by dense even aged second growth ponderosa pine and multi-storied Douglas-fir dominated stands. Current fire frequency in most of the planning area is greater than 50 years. Unplanned fire occurrence within the planning area under current conditions would likely result in stand-replacement crown fires (Fischer and Bradley, 1987; Graham et al., 2004).

Habitat Type Group 2: Cool Douglas-fir (approximately 13,191 Acres, 56%)

This habitat type group comprises the largest area (>50%) within the CFF planning area. In some areas it is similar to Habitat Group 1 in that it supports relatively open grown ponderosa pine and Douglas-fir forests if there were an intact disturbance regime. Sites in HTG-2 have slightly higher soil moisture and cooler temperatures resulting in some vegetation differences when compared to HTG-1, most notably the occurrence of some areas having a higher proportion of Douglas-fir in them and the occurrence of scattered western larch in some stands. If the fire regime had not been disturbed higher fire frequency sites (typically located adjacent to HTG-1 areas) would be dominated by ponderosa pine and longer fire return interval sites would have less ponderosa pine and increased amounts of Douglas-fir and scattered Western larch. The increased moisture availability on these sites allows them to support greater tree densities. Shrubs and moist site forbs dominate the understory; pinegrass and elk sedge are often well represented. Ponderosa pine and western larch are shade intolerant species whose abundance varies by habitat type phase which is related to time since disturbance. Douglas-fir is typically

present at most stages of stand development. The dominant fire groups range from dry Douglas-fir habitat types (fire group 4) to moister Douglas-fir habitat types (fire group 6) (Fischer and Bradley, 1987). Average fire frequency ranged between 5 and 50 years. Historically fire severity was variable, ranging from frequent, low intensity, non-lethal, understory fires to more infrequent, mixed severity fires.

Endemic level outbreaks of western spruce budworm are within NRV and occur during warm and dry climatic cycles in the HTG, increasing tree stress and predisposing Douglas-fir to other primary mortality agents such as Douglas-fir beetle on a small scale. However, widespread occurrence of western spruce budworm (WSB) defoliation and predisposal to Douglas-fir beetle are currently being experienced throughout this HTG (Flower, et al, 2014; Haavik, L. and Costanza, K., 2020) which are outside of NRV.

The absence of fire as a disturbance process and past harvest have resulted in corresponding shifts in species composition and stand structures. In terms of the NRV, ponderosa pine is underrepresented and have been replaced by shade intolerant Douglas-fir which is overrepresented. The amount of area in pole (5”-9” dbh) and very large size class (> 21” dbh trees) has been reduced from historic ranges. Medium (9.1”-15”) and large (15.1”- 21”) tree size classes exceed historic ranges. Much of the area occupied by HTG 2 within the Clark Fork Face area has dense, continuous, closed canopy Douglas-fir dominated stands with declining ponderosa pine and western larch. Overstocked Douglas-fir stands with dense understories often result in moderate to high burn severities (Fischer and Bradley, 1987).

Habitat Type Group 3: Moist Douglas-fir (approximately 230 Acres, 1%)

The moist Douglas-fir habitat type group comprises a small amount of the CFF planning area (<1%). Currently species composition within this habitat type group is primarily Douglas-fir with remnants of ponderosa pine, Western larch and/or lodgepole pine (fire group 6). Historically, mixed severity fires on 25–125-year average intervals functioned to maintain open stands of larger size-class western larch and Douglas-fir with western larch dominating the sites. Ponderosa pine and/or lodgepole pine, either as minor or major seral components, were also present depending on the site and disturbance regime. Late seral structures varied depending on site location and topography. Sites in areas with higher moisture content and retention such as valleys or north or east aspects were commonly open grown with large to very large size-classes present. These were almost pure western larch stands (Losensky 1997). Late seral structures were commonly uneven-aged in single-storied (or grouped two- storied) configurations of individuals or small, scattered even-aged groups with patches of reproduction or pole-sized trees in the openings. Drier sites on slopes or on south or west aspects were highly variable in age and species composition, although western larch still tended to exhibit dominance. Late seral stands on these drier sites generally were multi-layered with a mixture of species represented by small patches missed by earlier fire events (Losensky 1997).

Some sites are within the historical fire interval for portions of the mixed and lethal fire regimes within this type. However, the lower severity surface fires that historically occurred on shorter return intervals have been affected by fire suppression. With fire suppression, development of coniferous understories is increasing thereby shifting stand structure to multi-storied stands and

creating ladder fuels. Stand density is continuing to increase, predisposing portions of this type to a higher percentage of lethal fires instead of mixed severity fire.

Patch size due to changes in the fire frequency and intensity as well as previous logging within these types, has shifted the patch size to a smaller size than what historically occurred (see Appendix G: HTG 6: Cool and Moderately Dry Douglas-fir Series table for more detail).

In the absence of fire, stand understories have developed Douglas-fir thickets over much of the area occupied by this habitat type group within the CFF area. Historical logging that targeted removal of the dominant seral species (western larch, ponderosa pine and lodgepole pine) has allowed for an acceleration of a shift in species composition to a higher percentage of Douglas-fir while altering structure to more multi-layered, dense and younger age-class stands. As displayed in detail in Appendix G, there is a lack of ponderosa pine, Western larch and lodgepole pine (which historically comprised 74-95% of the species composition within this habitat type group) and an overabundance of Douglas-fir. Douglas-fir is currently dominant on 82% of this HTG where historically it is estimated that it occupied between 10%-15%. There is an overabundance of seedling / saplings and medium (9.1" – 15" DBH) size classes, while pole (5.1" – 9" DBH), large (15 – 21.1" DBH) and very large (> 21" DBH) trees are lacking (Appendix G). Fire intensity is currently mixed or lethal severity as evidenced by recent wildfire activity.

Habitat Type Group 4: Moist subalpine fir (approximately 2,588 Acres, 11%)

Mixed and stand replacement fires on 50-200+ year average intervals maintain mixed conifer forests dominated by western larch with Douglas-fir, lodgepole pine, spruce, subalpine fir and deciduous hardwoods (i.e. Scouler's willow and aspen). Historically this type generally exhibited a higher diversity of overstory tree species and understory tree, shrub, forb and graminoid species than many of the other habitat types. The combination of mixed and stand replacement fire regimes created the high diversity on the landscape. This HTG occurred in a matrix with HTGs 5 and 6. (Losensky 1997).

Many stands were multi-layered (1-3 layers; Arno and others 1997), with a mixture of species present occurring in small patch remnants/stands of various ages created from previous fire events (Losensky 1997). Climax multi-storied stands comprised of fire susceptible species (i.e. subalpine fir and spruce) required long time periods to develop. The development time of the climax stands in combination with the fire regimes generally did not allow these stands to develop to any great degree on the landscape (Fischer and Bradley 1987). Where late seral climax stands did occur, they would only persist on moister sites dependent on setting and juxtaposition with natural fire breaks (e.g., riparian, topographic, rock/scree and past fire patterns including "reburn" patches).

Historically patch size within this HTG was dependent on frequency, duration, intensity and severity of the fires occurring. On lands currently managed by the BLM containing this HTG (mid-elevations), patch sizes varied from small to large (50 to >500 acres, with 50% between 50-250 acres) and varied by extent of type and juxtaposition to adjoining fire groups (regimes).

In addition to fire, bark beetles and root diseases caused mortality in small groups under endemic conditions in HTG 4. Periodic outbreaks of western spruce budworm commonly occurred during warm dry climatic cycles and extensive host availability. These conditions increased stress and predisposed relatively dense multi- storied stands to primary mortality agents. Dwarf mistletoe infection in lodgepole pine was commonly associated with late seral stages and relatively open, two-storied stand structures also functioned to increase fire risk.

Extensive lodgepole pine mortality caused by mountain pine beetle epidemics occurred infrequently, usually concurrent with HTG 5 and 6 as a function of elevation and host quality and quantity relationships, commonly exacerbated by prolonged fire free intervals interrupted by drought cycles. Mountain pine beetle infestations have been recorded from as far back as 1894 (MT DNRC 2008). The last major mountain pine beetle outbreak, before the current outbreak, occurred in the1970's to early 80's and affected approximately 4 million acres within the state. Epidemic mountain pine beetle mortality predisposed affected areas to high risk of stand replacement fire at the landscape scale following windthrow and development of ladder fuels in canopy gaps.

Without fire as a disturbance agent, the seral species within this type gradually lose hold of the site and allow subalpine fir and Engelmann spruce to dominate (Davis 1980). Current conditions have higher tree density and greater spatial continuity of these types when compared to historic conditions. The combination of both conditions allows insect and disease epidemics and stand replacement events outside of their historical scale, interval and pattern to occur. As the time between disturbances lengthens, components of aspen, shrub and grasslands that may have existed on the landscape historically decrease and are replaced by shade-tolerant conifers (Brown and Smith 2000). Lack of appropriate disturbance, both temporally and spatially, have increased both ladder fuels and down woody debris allowing the fire regime to shift from mixed severity to greater acres in the stand replacement type. Overall vegetation biodiversity also decreases as the fire regime changes (Brown and Smith 2000).

These sites generally occur on relatively moist and cool to cold slopes and benches between 3,200-7,000 feet in elevation (Pfister and others 1977; Arno and others 1985). On lands managed by the BLM within this HTG, current patch sizes range from small to medium (<50 acres up to 150 acres). Currently 68% of these patches are less than 50 acres. Douglas-fir, lodgepole pine, Engelmann spruce and subalpine fir are currently the dominant species on sites within this HTG. On BLM managed lands, there is an overabundance of pole (5.1 – 9" DBH), medium (9.1 0 15" DBH) and large (15.1 – 21" DBH) size classes, while the seedling / sapling (0-5" DBH) and the very large (>21" DBH) size classes are unrepresented. For more detail on comparisons between current and desired conditions within this HTG, refer to Appendix G.

Habitat Type Groups 5 and 6: Moist subalpine fir (approximately 433 Acres, 1.8%)

Habitat Type Group 5: Cold Subalpine fir (approximately 80 Acres, <1%)
Habitat Type Group 6: Very Cold Subalpine fir (approximately 355 Acres, 1.5%)

Stand replacement fires on 125–250-year intervals functioned to perpetuate extensive even-aged, single- storied lodgepole pine stands. Evidence suggests that "reburn" events periodically occurred within 50 years following a lethal fire event. These lower severity "thinning" fires

occurred at the stand scale but were probably rare at the landscape scale. Ground fires removed invading shade-tolerant competition from the understory and reduced risk of higher severity fires. Longer fire-free intervals resulted in establishment of subalpine fir and other shade tolerant species in the understory (dependent on seed source) leading to two- storied structures as lodgepole pine succeeded to other species over the course of 100-200 years.

Development of complexity in composition and structure was rare as a function of low representation of persistent fire-resistant species; distance from seed source; slow succession rates; and fuel conditions (including low decomposition rates) which generally favored high severity fire regimes over lower severity regimes.

Patch sizes were generally medium to large (150 to greater than 500+ acres) as a function of setting and juxtaposition with other high severity fire groups. Large scale wind-driven events during drought cycles were common in this type.

Extensive lodgepole pine mortality caused by mountain pine beetle epidemics occurred infrequently, usually concurrent with HTG-4 as a function of elevation and host quality and quantity relationships, commonly exacerbated by prolonged fire free intervals interrupted by drought cycles. Mountain pine beetle infestations have been recorded as far back as 1894 (MT DNRC 2008). The last major mountain pine beetle outbreak, before the current outbreak, occurred in the1970's to early 80's and affected approximately 4 million acres within the state. Epidemic mountain pine beetle mortality predisposed affected areas to high risk of stand replacement fire at the landscape scale following windthrow and development of ladder fuels in canopy gaps. Dwarf mistletoe infection in lodgepole pine was commonly associated with late seral stages and relatively open, two-storied stand structures also functioning to increase fire risk.

Lodgepole pine is the dominant seral species throughout the type and subalpine fir is the indicated climax species, rarely achieving dominant status at the landscape scale. This status is a function of seed source and slow succession rates which are often interrupted by stand replacement fire. Douglas-fir is a minor seral component on warmer drier sites transitional to HTG-3 sites. Spruce is a minor seral component on moister sites that are generally transitional to HTG-4 sites.

Overall, individual stands are within the historical range of conditions for this type, however age class and shade-tolerant species compositions of the stands have shifted and are now covering a higher than natural proportion of the landscape (Arno and Fiedler 2005). Due to fire suppression within the last 100 plus years, stands within this HTG that have not experienced fire or harvest have shifted age classes from young, immature into mostly mature and overmature which allows large acreages of this type to exist in a lodgepole pine 'old forest' state. Lodgepole pine forests within this late seral state are within the age and size classes to be predisposed to mountain pine beetle epidemics and dwarf mistletoe infestation (Losensky 1997). These mature and overmature lodgepole forests are currently occurring over a larger area than they did historically, creating a loss of diversity within this type (Losensky 1997; Fiedler et al. 2004). Loss of diversity is occurring spatially since the patch sizes are not within historical context. Vegetation diversity is being reduced since fire disturbance in this type allows for development of shrub fields and understory forb and grass components (Fiedler et al. 2004).

As discussed in 'Wildland Fire in Ecosystems: Effects of Fire on Flora' (Brown and Smith 2000), fuel loading and buildup is an important factor for length of fire interval within an area. Due to mortality associated with the 2010-2015 mountain pine beetle outbreak, fuel loading within many stands in this HTG has increased exponentially as lodgepole pine snags fall. This increase in fuel loading has prepared these stands for stand replacement fires, potentially at a larger scale than what occurred historically.

These sites occur across a range of conditions depending on the habitat type. The range of sites include moderate to steep slopes on north to east aspects, dry slopes and ridges, cool and moist uplands, well- drained benches and frost pocket basins between 5,000-8,5000 feet in elevation (Pfister et al. 1977). Patch sizes on lands managed by the BLM within these HTGs range from small to medium (50 acres up to 150 acres) with almost 70% of these patches less than 50 acres in size. Dominant species in order of abundance are lodgepole pine and Douglas-fir. On BLM managed lands in HTG-5, there is an overabundance of pole (5.1 – 9" DBH), and medium (9.1 - 15" DBH) size classes, while the seedling / sapling (0-5" DBH), and large (15.1 – 21" DBH) and the very large (>21" DBH) size classes are unrepresented. On BLM managed lands in HTG-6, there is an overabundance of seedling / sapling (0-5" DBH), and medium (9.1 - 15" DBH) size classes, while the pole (5.1 – 9" DBH), and large (15.1 – 21" DBH) and the very large (>21" DBH) size classes are unrepresented. For more detail on comparisons between current and desired conditions within this HTG, refer to Appendix G.

Habitat Type Groups 9, (approximately 1,056 Acres, 4%)

Within the planning area approximately 1,056 acres are within HTG-9. These sites are a mix of historically non-forested grass / shrub / riparian lands. Historically these dry sites would have self-maintained due to frequent fire return intervals of lethal severity in light flashy fuels. Land use and fire suppression over the last century has reduced or eliminated fire's role on the landscape and has allowed conifer encroachment into many historically non-stocked upland sites. These sites now hold an overabundance of trees of all size classes and are in many cases outside NRV due to that stocking. Within HTG-9, the riparian areas would have seen less frequent fire and so the impact of fire suppression and the resulting deviation from NRV is less, although the impacts of other historic land uses (i.e. Grazing) remains significant. For more detail on the current size class and stand structures within HTG-9, refer to Appendix G.

NA and Blank: Non- Forest, Agriculture and Urban (approximately 82 Acres, <1%)

As stated earlier in this section and in greater detail in the Resource Issue 2 Affected Environment, land conversion from forestland to rural development (Wildland Urban Interface) has increased dramatically over the last several decades, and the planning area now holds over 2,600 homes and structures (see Appendix D Maps 9.9 and 9.10). Current conditions are detailed in the Appendix G, however no desired condition, or deviation from NRV has been established for these 82 acres approximately.

Table 11: CFF Acres by HTG on BLM only.

CFF Planning Area by HTG BLM ONLY		
HTG	acres	% of total
HTG-1	6,085	26%
HTG-2	13,191	56%
HTG-3	230	1%
HTG-4	2,588	11%
HTG-5	80	0.3%
HTG-6	355	2%
HTG-9	1,056	4%
Not Applicable	57	0.2%
(blank)	25	0.1%
Grand Total	23,666	100%

Environmental Effects —No Action Alternative

The No Action alternative does not involve any active management strategies and the landscape would remain highly vulnerable to stressors currently present. Proposed Actions designed to increase stand vigor and long-term resistance to unnatural fire and insect and disease damage would be deferred, increasing the risk of stress-induced insect and disease damage in response to increasingly higher tree densities and competition while ultimately predisposing stands to higher risk of crown fire over time (Hood et al. 2016, Byler 1990, Carlson 1989, Fiedler et al. 2004, Graham et al. 1999).

From the USFS Northern Region, Forest Health Protection, Missoula Field Office Trip Report MFO-TR-20-06:

> *No Action: DFB-caused mortality and WSB defoliation and mortality in understory Douglas-fir will continue. Continued WSB defoliation will cause reductions in growth, and thus timber value. Also, survival of understory Douglas-fir will not be likely, as caterpillars feeding in chronically infested trees in the overstory will fall to the understory and kill the smaller trees with fewer energy reserves. Drought or other short-term disturbance is likely within the 15-y management horizon of this project, which could easily initiate, and possibly sustain, a DFB outbreak in high hazard stands.* (Haavik, L. and Costanza, K., 2020).

The No Action alternative would allow understory vegetation to continue to develop, intensifying ladder fuel accumulations. This would result in a continuation of the shift in species composition to Douglas-fir in the understory. Where young ponderosa pine and western larch exists in the understory it would be outcompeted by Douglas-fir, as conditions are favorable for its dominance. Wildfire occurrence could result in rapidly spreading high intensity crown fires due to sapling and pole thickets beneath the main canopy (Fischer and Bradley 1987). This type of fire is likely to result in high levels of mortality in the ponderosa pine and western larch

component in the understory and overstory and consume ponderosa pine and western larch seed sources, potentially reducing its distribution across the landscape. Opportunity to reduce fire risk to adjacent high value areas would also be lost while the risk of independent crown fire and severe surface fire would increase over time. The opportunity to increase fire suppression efficiency and effectiveness through establishment of fuel breaks adjacent to and within the WUI would be lost. A continued decline in associated wildlife habitat would occur over time as bunchgrass and understory communities would be reduced as conifer canopy cover continues to increase. Overall, the effects are a degradation of ecologically at-risk native forb and bunchgrass communities and dry, open ponderosa pine, western larch and Douglas-fir communities. This alternative would move sites on their present trajectory away from ecologically sustainable desired future conditions.

Table 12: CFF BLM Acres per HGT and Percent Change with No Action.

CFF BLM Acres per HTG and Percent Change NO ACTION				
Habitat Type Group	acres	% of total BLM	No Action Treatment Acres	% change on BLM
HTG-1	6092	26%	0	0%
HTG-2	13166	56%	0	0%
HTG-3	228	1%	0	0%
HTG-4	2588	11%	0	0%
HTG-5	80	0%	0	0%
HTG-6	353	1%	0	0%
HTG-9	1058	4%	0	0%
Not Applicable	58	0%	0	0%
(blank)	23	0%	0	0%
Grand Total	**23646**	**100%**	**0**	**0%**

3.0.1.1 Reasonably Foreseeable Actions

The reasonably foreseeable actions within the next two decades, associated with the no action alternative, are continued timber harvest, fuels management and vegetation treatments on the non-BLM public and private lands within the planning area. On BLM lands in the planning area, continued fire suppression and corresponding accumulation of fuels as well as diminishing forest health is expected. These treatments without the proposed action will still have the effect of improving the forest health, vigor and resilience in the area, however the effectiveness of these treatments will be diminished by the BLM's lack of action. BLM will be failing to address forest health and fire risk identified by multiple agencies and efforts such as the Montana Forest Action Plan and Wildfire Adapted Missoula (see Appendix D, Map 9.11). See Appendix H for a complete list of reasonably foreseeable actions in the planning area over the next two decades.

Environmental Effects—Alternative 2 (proposed action) and Alternative 2b (sub-alternative)

This effects analysis addresses how the Proposed Action alternative and sub-alternative would impact forest resources in the context of species composition, density, structure, fuel loading and associated fire behavior. The number of proposed treatments by habitat type group is displayed

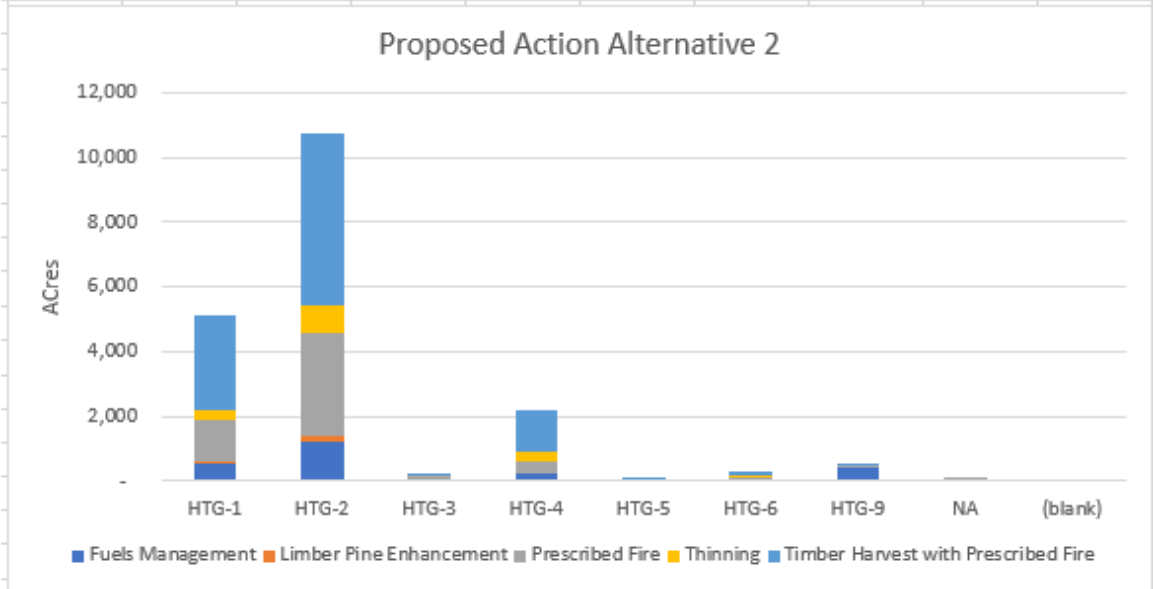
below. See Appendix 9, Map 9.3 for Habitat Type Groups within the planning areas and Maps 9.1 and 9.2 for the proposed action and sub-alternative maps.

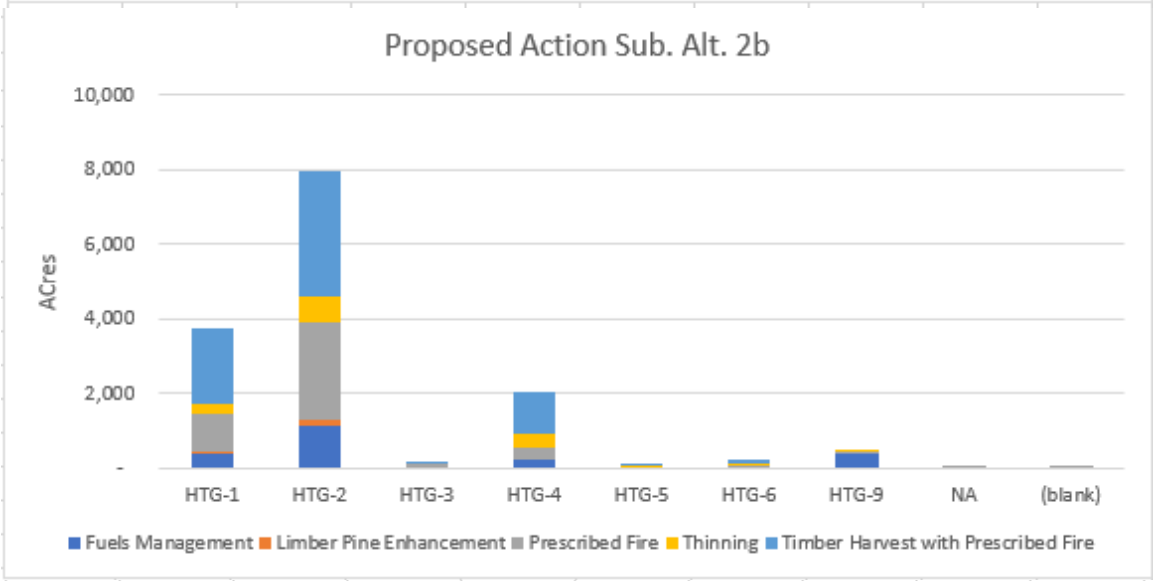
	Habitat Type Group Acres - Proposed Action B									
Treatment Group	**HTG-1**	**HTG-2**	**HTG-3**	**HTG-4**	**HTG-5**	**HTG-6**	**HTG-9**	**NA**	**(blank)**	**Grand Total**
Fuels Management	519	1,200	0	212	22	32	381	20	8	2,394
Limber Pine Enhancement	102	191	12				1			306
Prescribed Fire	1,240	3,153	128	356	14	89	65	20	3	5,068
Thinning	309	867	7	356	8	19	1			1,567
Timber Harvest with Prescribed Fire	2,951	5,326	59	1,290	23	162	0			9,812
Grand Total	**5,121**	**10,737**	**207**	**2,214**	**68**	**302**	**447**	**40**	**11**	**19,147**

	Habitat Type Group Acres - Proposed Action 2B									
Treatment Group	**HTG-1**	**HTG-2**	**HTG-3**	**HTG-4**	**HTG-5**	**HTG-6**	**HTG-9**	**NA**	**(blank)**	**Grand Total**
Fuels Management	401	1,123	-	210	22	32	381	20	8	2,197
Limber Pine Enhancement	62	165	6	-	-	-	-	-	-	232
Prescribed Fire	978	2,611	100	353	14	59	56	20	3	4,194
Thinning	260	700	6	341	8	19	1	-	-	1,335
Timber Harvest with Prescribed Fire	2,033	3,358	38	1,133	23	119	-	-	-	6,704
Grand Total	**3,734**	**7,957**	**150**	**2,037**	**68**	**229**	**437**	**40**	**11**	**14,662**

	Acre Difference Between Alternatives									
Treatment Group	***HTG-1***	***HTG-2***	***HTG-3***	***HTG-4***	***HTG-5***	***HTG-6***	***HTG-9***	***NA***	***(blank)***	***Grand Total***
Fuels Management	*118*	*78*	-	*2*	-	-	-	-	-	*197*
Limber Pine Enhancement	*40*	*26*	*6*	-	-	-	-	-	-	*73*
Prescribed Fire	*263*	*542*	*28*	*3*	-	*30*	*9*	-	-	*874*
Thinning	*50*	*167*	*1*	*15*	-	-	-	-	-	*232*
Timber Harvest with Prescribed Fire	*918*	*1,968*	*22*	*158*	-	*43*	-	-	-	*3,108*
Grand Total	***1,388***	***2,781***	***57***	***177***	**-**	***72***	***9***	**-**	**-**	***4,485***

Figure 15: Proposed Treatment Acres by HTG – Proposed Action versus the Sub Alternative 2b.


Proposed Action Alternative 2
12,000
10,000
8,000
6,000
4,000
2,000
-
ACres
HTG-1
HTG-2
HTG-3
HTG-4
HTG-5
HTG-6
HTG-9
NA
(blank)
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire


Proposed Action Sub. Alt. 2b
10,000
8,000
6,000
4,000
2,000
-
ACres
HTG-1
HTG-2
HTG-3
HTG-4
HTG-5
HTG-6
HTG-9
NA
(blank)
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire

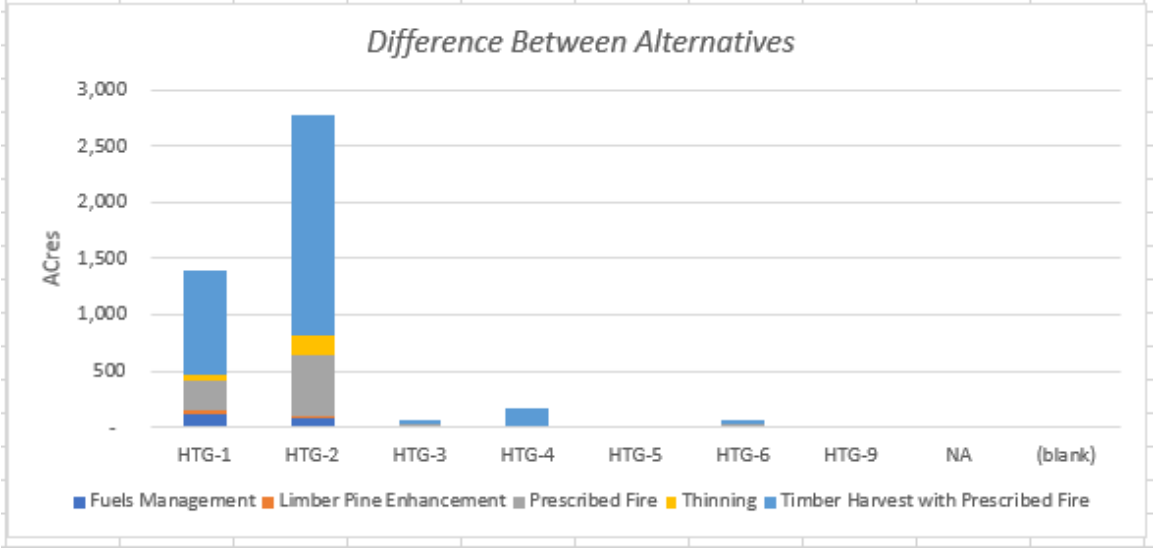

Difference Between Alternatives
3,000
2,500
2,000
1,500
1,000
500
-
ACres
HTG-1
HTG-2
HTG-3
HTG-4
HTG-5
HTG-6
HTG-9
NA
(blank)
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire

Figure 16: Proposed Treatment Acres by HTG – Proposed Action versus the Sub Alternative 2b.

Under the Proposed Action, Fuels Management, Limber Pine Enhancement, Prescribed Fire, Thinning or Timber Harvest with Prescribed Fire are proposed on 19,147 or 81% of BLM lands within the proposed planning area across all HTGs (Table 13 below) and, for the sub-alternative, on 14,662 or 62% of BLM lands within the proposed planning area across all HTGs (Figure 17 below). These treatment types are expected to have similar effects to forests and fuels within the planning area, so they are grouped for purposes of the effects analysis. The immediate effects of prescribed fire, timber harvest with prescribed fire, thinning, limber pine enhancement and fuels management treatments include: 1) a shift in species composition towards desired conditions which are within the natural range of variability, as described in the detailed Proposed Action (See Appendix G for NRV and Desired Conditions). 2) a reduction in tree density; and 3) increased tree vigor as thinning increases stand photosynthetic efficiency and net primary productivity in residual trees by as much as 20%, functioning to increase crown vigor and resulting diameter growth (Smith et al. 1997).

Table 13: Proposed Action. Percent Change per HTG on BLM and Total across the CFF planning area.

CFF Acres per HTG and Percent Change							
Habitat Type Group	BLM acres	% of total BLM	Proposed Treatment Acres	% change on BLM	Total acres all ownerships	% of total	Proposed Treatment as % of total
HTG-1	6,085	26%	5121	84%	40,964	17%	2%
HTG-2	13,191	56%	10737	82%	128,472	52%	4%
HTG-3	230	1%	207	91%	2,368	1%	0%
HTG-4	2,588	11%	2214	86%	18,155	7%	1%
HTG-5	80	0%	68	85%	726	0%	0%
HTG-6	355	1%	302	86%	3,503	1%	0%
HTG-9	1,056	4%	447	42%	28,676	12%	0%
Not Applicable	57	0%	40	69%	62	0%	0%
(blank)	25	0%	11	48%	24,267	10%	0%
Grand Total	**23,666**	**100%**	**19147**	**81%**	**247,191**	**100%**	**8%**

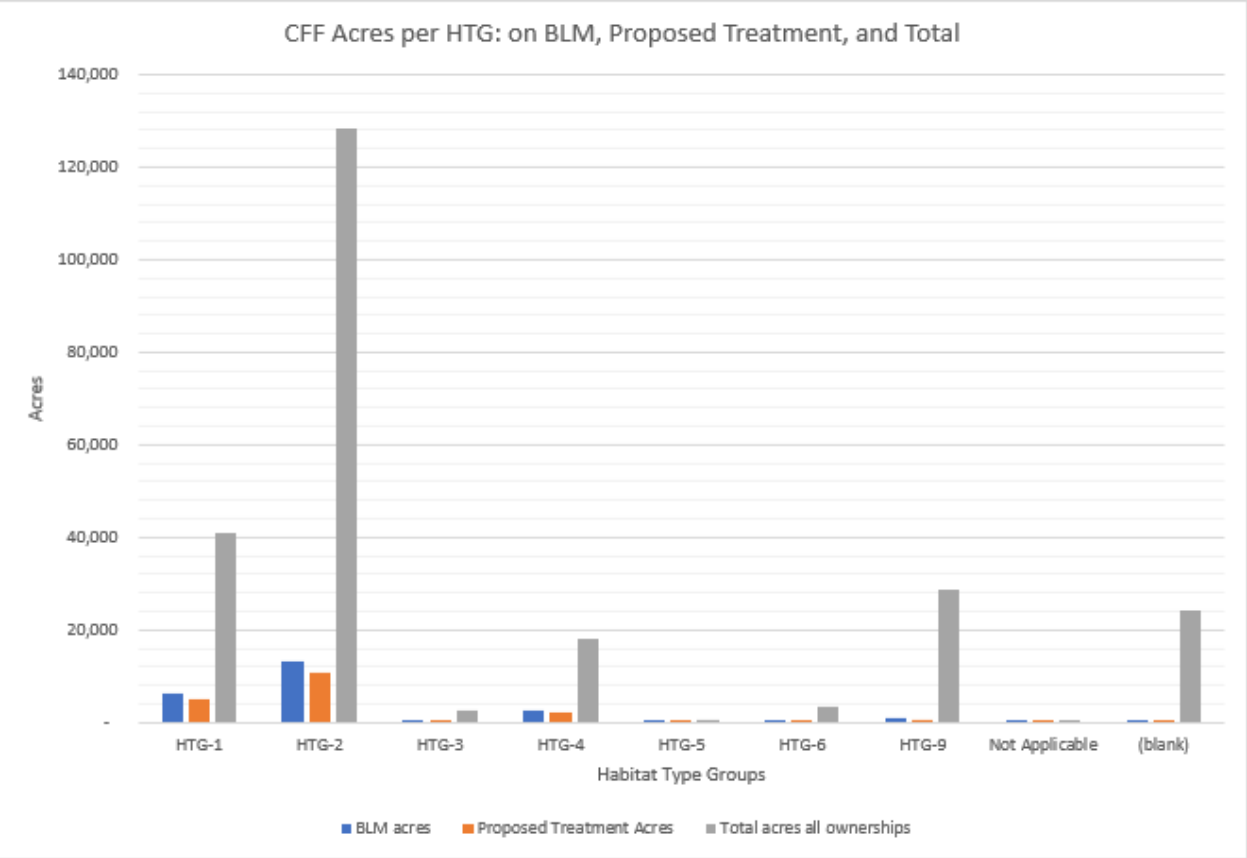


Figure 17: Proposed Action. Acres per HTG: on BLM, Proposed Treatment, and total across all ownerships.

CFF Acres per HTG and Percent Change - Proposed Action 2B							
Habitat Type Group	BLM acres	% of total BLM	Proposed Treatment Acres	% change on BLM	Total acres all ownerships	% of total	Proposed Treatment as % of total
HTG-1	6,085	26%	3,734	61%	40,963	17%	2%
HTG-2	13,191	56%	7957	60%	128,470	52%	3%
HTG-3	230	1%	150	65%	2,368	1%	0%
HTG-4	2,588	11%	2037	79%	18,155	7%	1%
HTG-5	80	0%	68	85%	726	0%	0%
HTG-6	355	2%	229	64%	3,503	1%	0%
HTG-9	1,056	4%	437	41%	28,675	12%	0%
Not Applicable	57	0%	40	70%	63	0%	0%
(blank)	25	0%	11	45%	24,267	10%	0%
Grand Total	**23,666**	**100%**	**14,663**	**62%**	**247,190**	**100%**	**6%**

Figure 18: Sub-Alternative. Percent Change per HTG on BLM and Total across the CFF planning area.

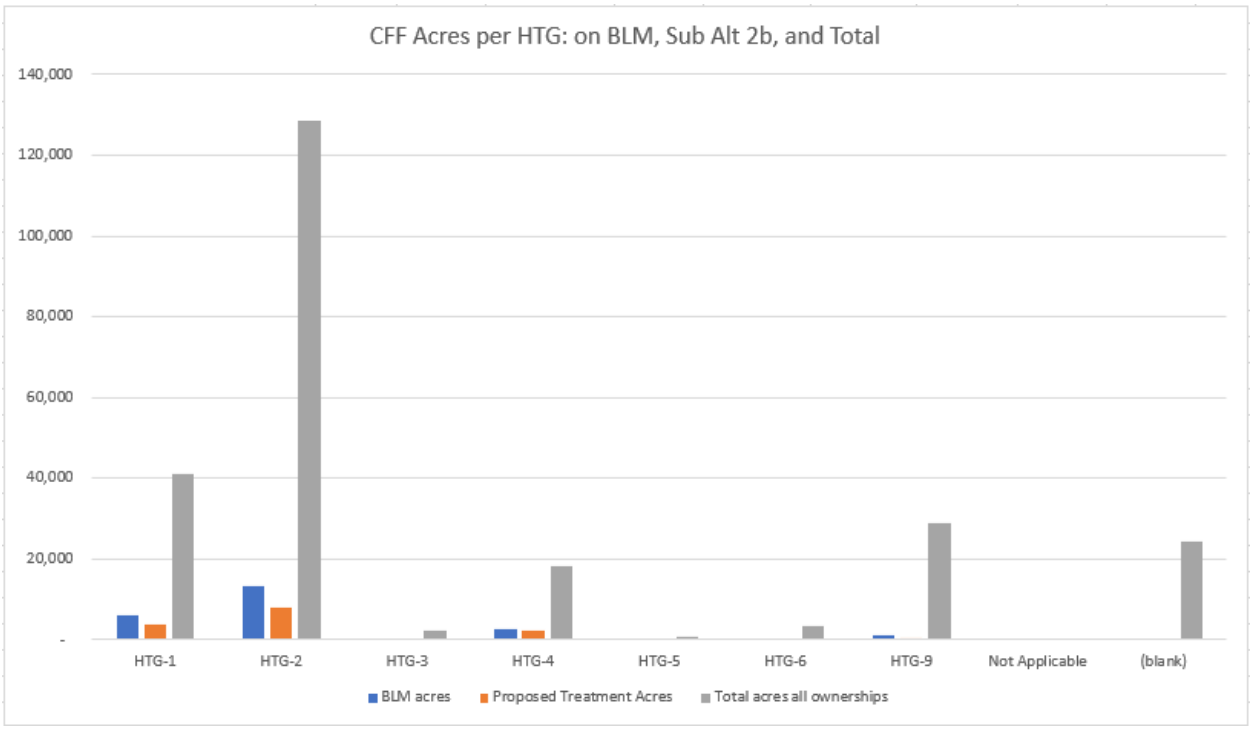


Figure 19: Sub-Alternative. Acres per HTG: on BLM, Proposed Treatment, and total across all ownerships.

As indicated above for the Proposed Action, while the proposed treatment would treat approximately 81% of the BLM ownership in the planning area, it would only affect 8% of the entire planning area and less than 4% of any given HTG. For the sub-alternative, the proposed treatment would treat approximately 62% of the BLM ownership in the planning area, it would only affect 6% of the entire planning area and less than 4% of any given HTG. Long term effects of proposed prescribed fire, timber harvest with prescribed fire, thinning, limber pine enhancement and fuels management treatments include: 1) accelerated development of a size class distribution (stand structure) that more closely resembles desired conditions which would be within the natural range of variability (see Appendix G); 2) movement toward open uneven aged stand structures that are currently under-represented through thinning and harvest of the dense even aged second growth in the planning area. Uneven aged silvicultural systems that are proposed for timber harvest create or maintain multi-aged stand structures (Smith et al. 1997); 3) proposed treatments would increase tree vigor and as a result increase resilience to insect and disease disturbances outside of the natural range of variability over time by diminishing competition for water and nutrients and by favoring non-host species and creating species diversity (Hood et al. 2016, Byler 1990, Carlson 1989); and 4) wildfire risk in the context of occurrence probability would not be affected through implementation of proposed actions. However, proposed treatments would modify fuel loading, arrangement, and continuity to reduce the risk of high intensity crown fire at the stand level across the planning area while improving fire suppression efficacy and efficiency near and within the WUI. Mechanical fuel treatments followed by prescribed burning has been shown to reduce fire severity over burning alone or deferring pre burn fuel treatments (Pollet and Omi 2002, Omi et al. 2006, Peterson et al. 2005). Increased ground cover of bunchgrasses, forbs and shrubs would occur as a result of

Proposed Actions due to a reduction in tree canopy cover and the resulting abundance of sunlight.

While the exact impacts of climate change are unknown, current modeling suggests that the local climate will generally become warmer and drier over the next several decades (https://climatena.ca/). Current science suggests that specific individual tree species will be more likely to survive these changes, and generally more drought tolerant species will be among the best suited for the anticipated changes (https://specieshabitattool.org/spht/). With those changes, increased frequency of large-scale disturbances such as mega-fires, insect and disease outbreaks are expected to cause tree mortality in susceptible and stressed forest stands.

Through implementation of the proposed action and/or sub-alternative, the project is designed to improve forest health and resiliency at a landscape scale although at a greater degree by the proposed action because the BLM could achieve more treatments. These improvements to forest health and resiliency through promotion of stand diversity and individual tree vigor, as well as site specific reforestation, would produce forests which are best suited to survive the anticipated changes in climate (UC-ANR. 2017). As stated in Adapting Forests to Climate Change: To help your mixed-conifer forest adapt to climate change, consider ways to encourage resilience to drought, fire, and insect attacks. Strategies include thinning to reduce competition, managing for species diversity, and selecting seedlings that are likely to survive a warmer, drier climate (UC-ANR. 2017).

The proposed action and sub-alternative would be expected to result in a net carbon storage increase compared to the no action alternative although a degree (approximately 20% more) for the proposed action versus the sub-alternative. While an initial forest carbon loss is expected immediately following treatment (1-10 years), a longer-term (20 – 50 years) forest carbon gain is expected as tree vigor and forest health improve over pre-treatment condition. As mentioned in Lippke et al.,2004, “The greatest rate of carbon storage occurs in the first 50 years of growth and then the rate lessens over time… from empirical data there is little if any increase beyond 120 years” (Lippke et al., 2004a). Additionally, forest products such as building materials continue to store carbon while the forest carbon stores increase through vigorous growth, having an additive and compounding effect on carbon sequestration through time (OFRI 2006).

The anticipated reduction in wildfire risk from the proposed action and, to a lesser extent the sub-alternative, also reduces the potential carbon emissions from to large-scale mega-fires. As stated in Krankina and Harmon 2006: "Restoring Forest resilience to extreme disturbance events through thinning to reduce stocking levels can generate wood-based products or biomass energy as byproducts of forest treatments while decreasing the likelihood that large-scale future disturbances would create both immediate and long-term carbon releases through fire or decomposition.” Lower stocking and diverse species tend to reduce fire severity resulting in more trees surviving the fire and hence more carbon stored than if a fire kills most or all standing trees (OFRI 2006). The proposed action and, to a lesser extent the sub-alternative, is also expected to have a beneficial impact on greenhouse gas emissions by producing wood for building materials and by using wood as fuel instead of fossil fuels (OFRI 2006).

Under the Proposed Action, prescribed fire without thinning or harvest is proposed on approximately 5,068 acres or 21% of BLM lands within the planning area across all HTGs.

Prescribed fire is proposed on sites that support understory vegetation with thickets of conifer encroachment below the main canopy. Douglas-fir is the primary understory conifer species. As described in the Proposed Action, one of the objectives of this treatment is to restore and maintain early seral conditions in ponderosa pine and western larch stands. Direct effects of proposed prescribed burning would include a reduction in seedling and sapling sized Douglas-fir by 50 to 75%, an increase in mineral soil exposure which creates favorable seedbeds for western larch and ponderosa pine regeneration and a reduction in ladder fuels and surface fuel loading. These direct effects would create the following indirect effects: 1) a shift in species composition from an overabundance of shade tolerant Douglas-fir to early seral fire adapted ponderosa pine and western larch; 2) increased representation and vigor of understory bunchgrasses and shrubs; 3) movement towards or maintenance of open uneven aged stand structures; and 4) a reduction in risk of wildfires burning outside their natural range of variability.

The sub-alternative would enable prescribed fire without thinning or harvest as proposed on approximately 4,194 acres or 18% of BLM lands within the planning area across all HTGs. Direct effects of proposed prescribed burning would include a reduction in seedling and sapling sized Douglas-fir by 50 to 75%, an increase in mineral soil exposure which creates favorable seedbeds for western larch and ponderosa pine regeneration and a reduction in ladder fuels and surface fuel loading although less than the Proposed Action.

The suite of proposed treatments is designed to shift species composition, structure and density towards the midpoint NRV as stated. Stand structure current conditions on BLM lands and desired conditions are as follows (charts prepared from data presented in Appendix G):

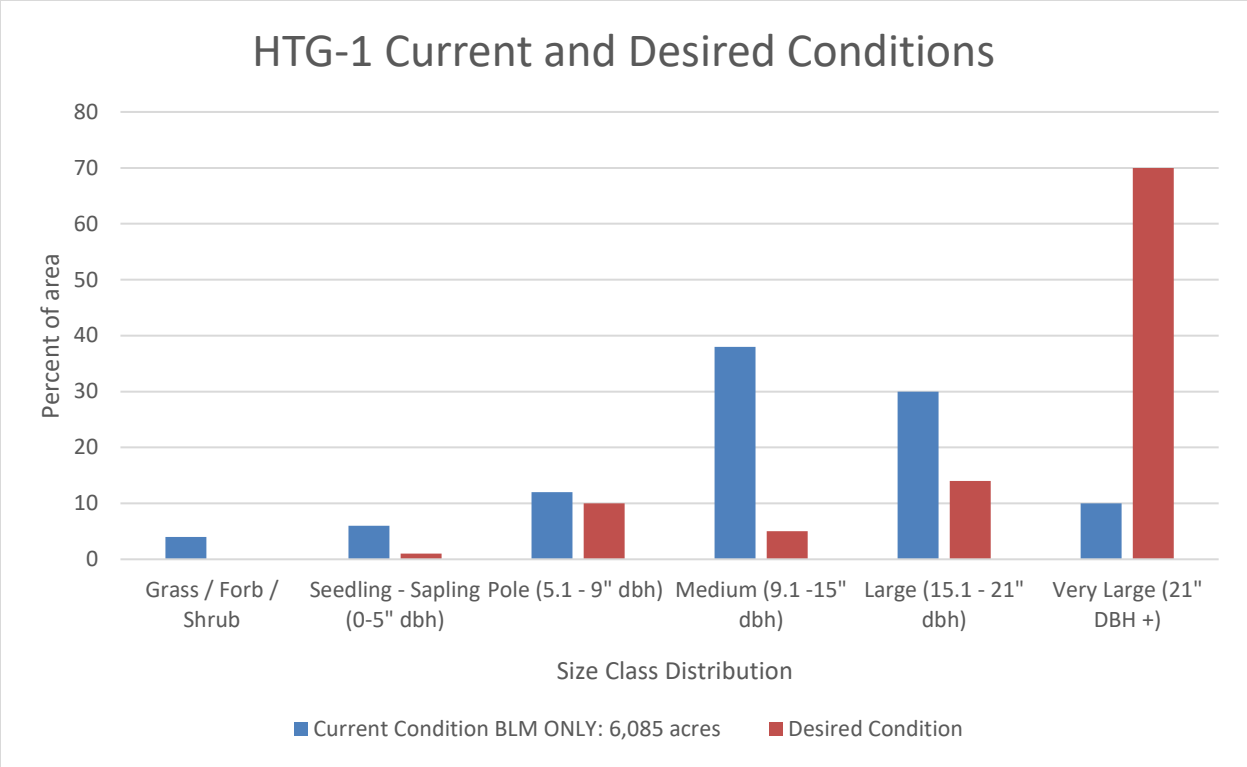


Figure 20: HTG-1 Current and Desired Conditions

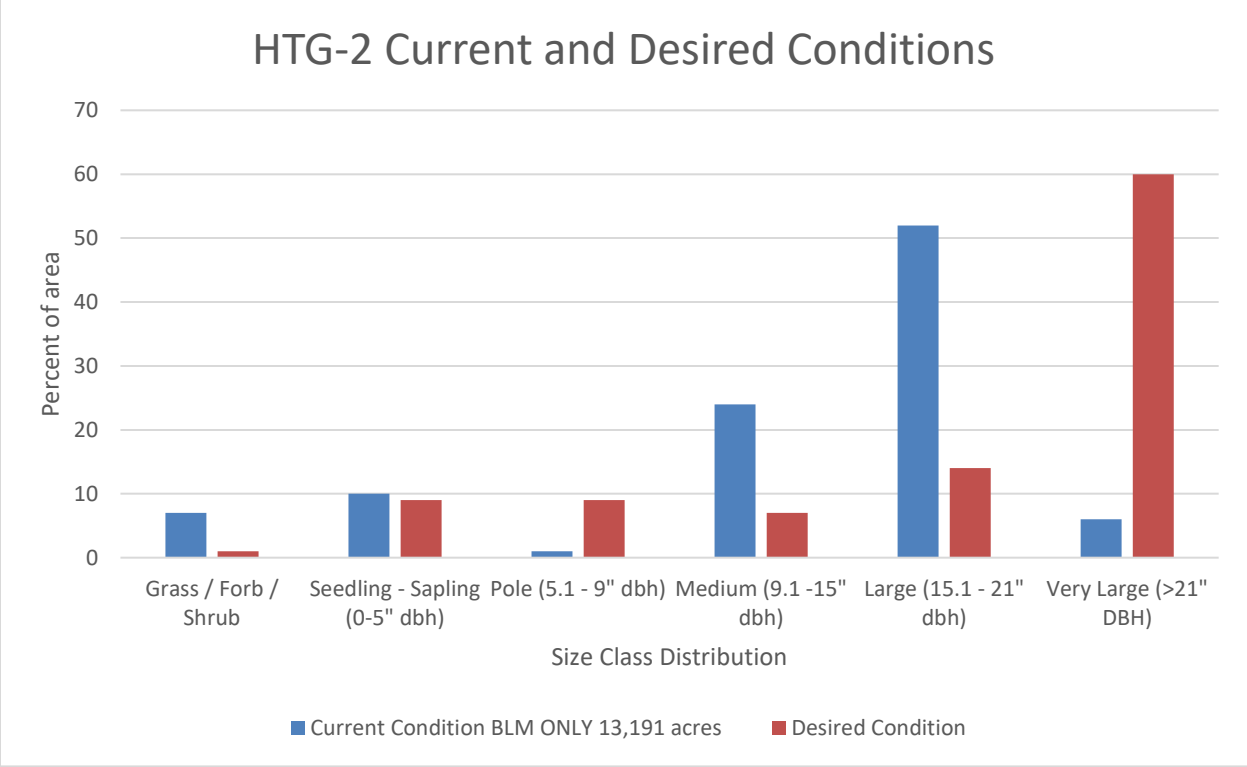


Figure 21: HTG-2 Current and Desired Conditions

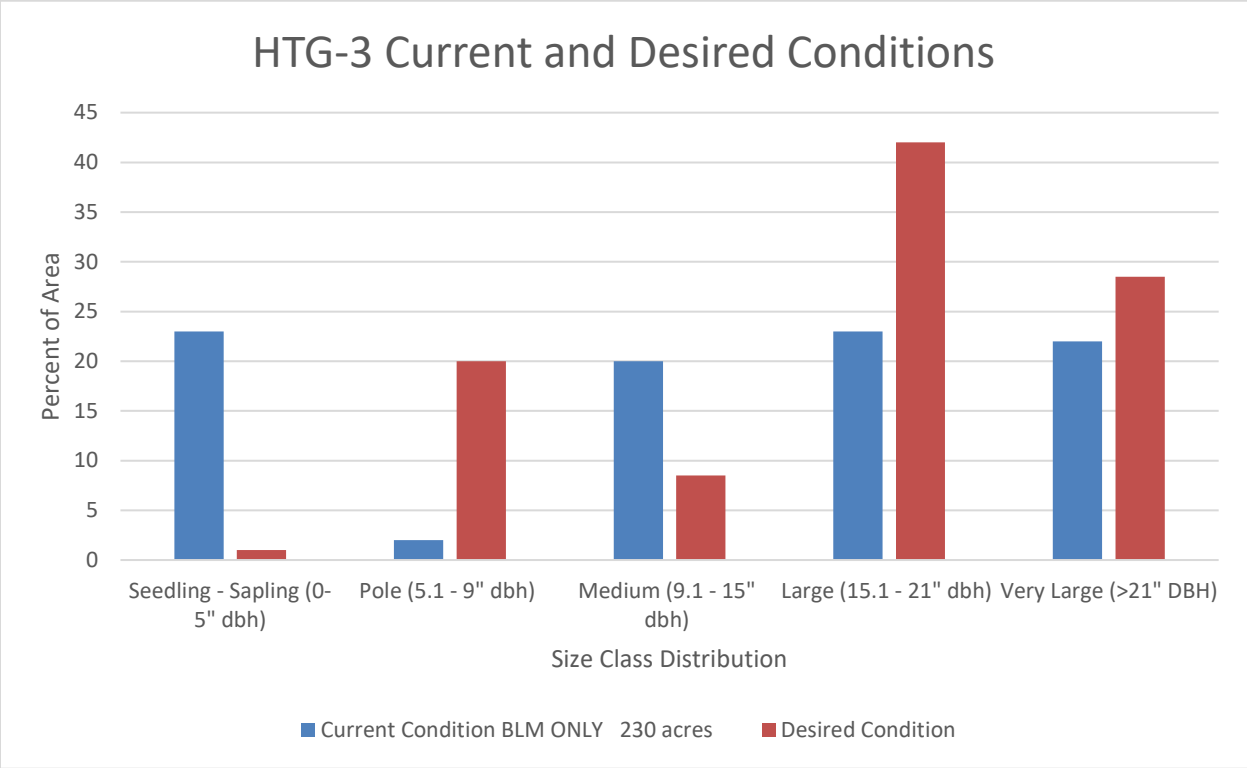


Figure 22: HTG 3 Current and Desired Conditions

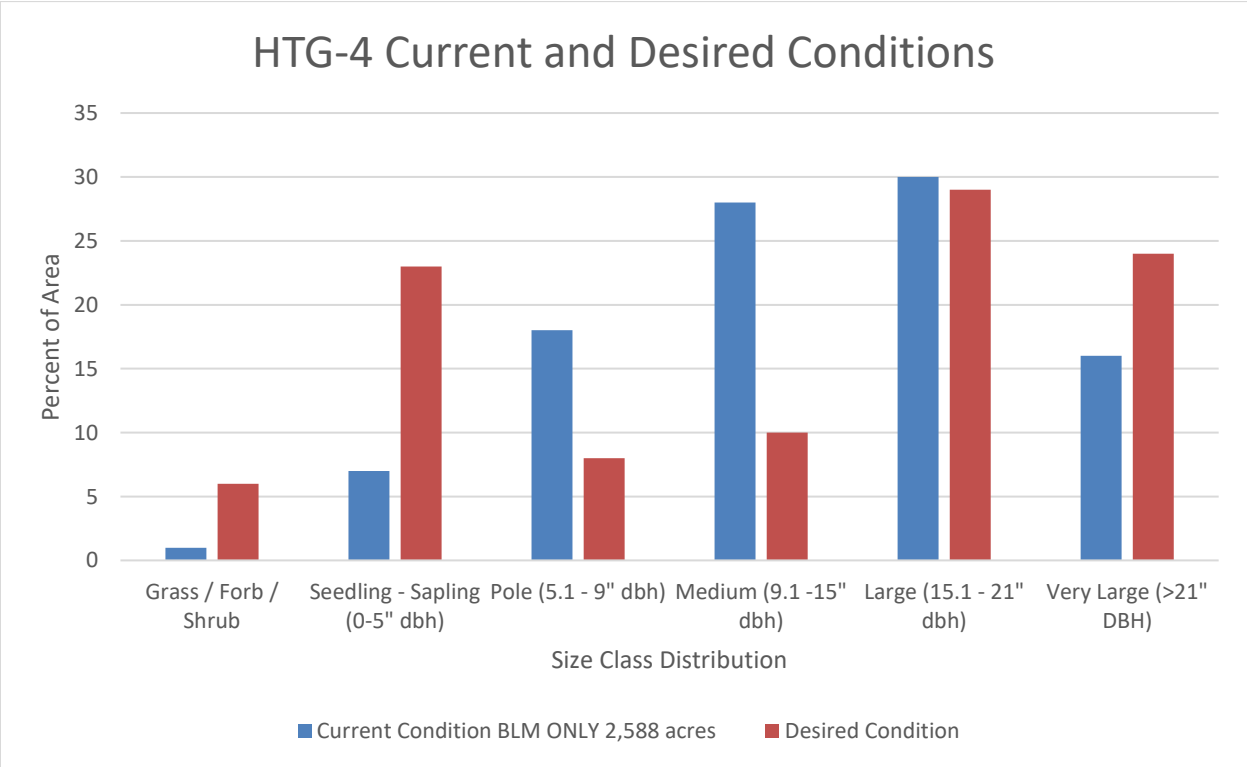


Figure 23: HTG 4 Current and Desired Conditions

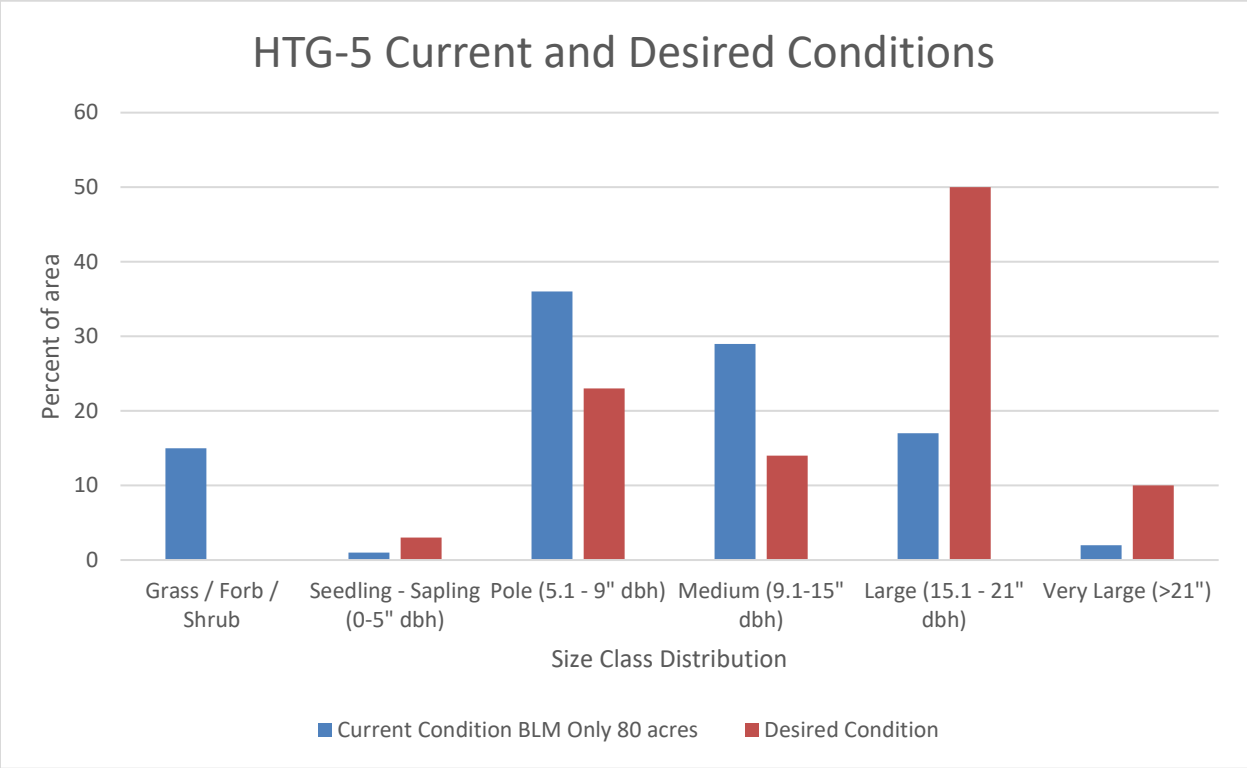


Figure 24: HTG 5 Current and Desired Conditions

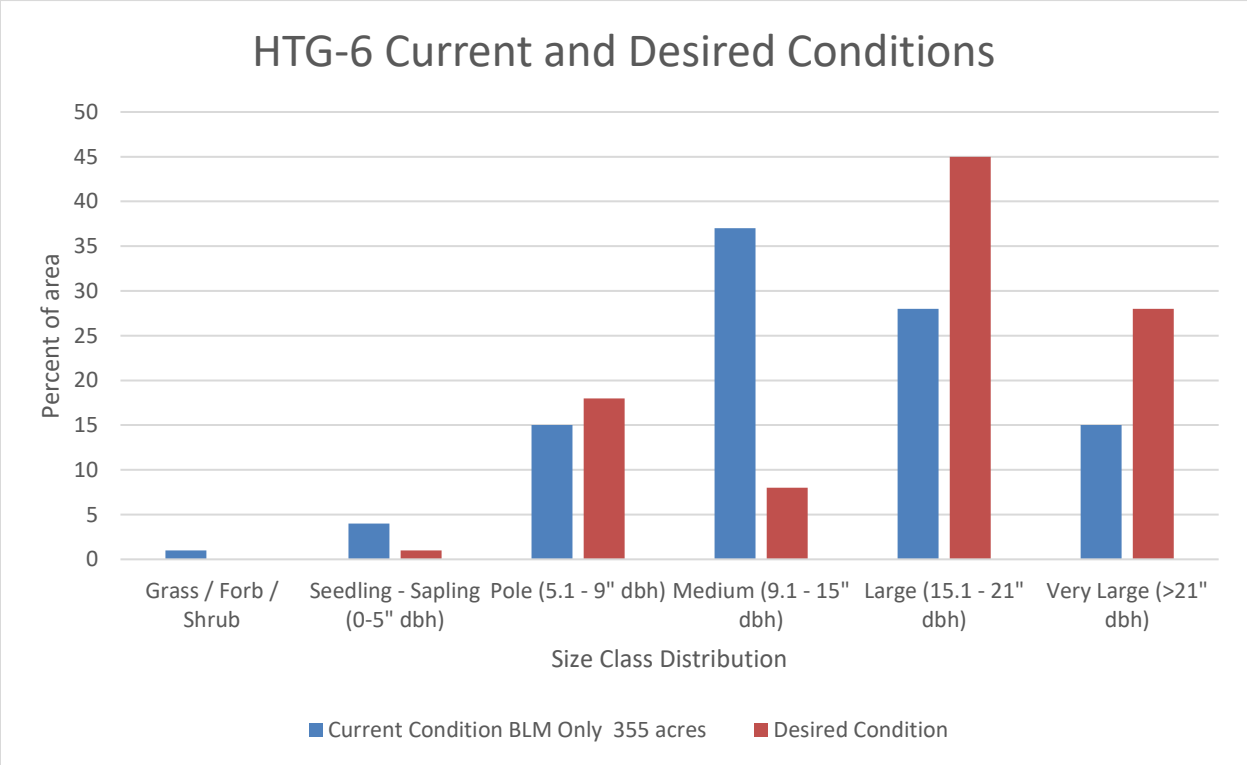


Figure 25: HTG 6 Current and Desired Conditions

Current Condition and Desired condition charts were not prepared for HTG-9, NA or Blank and these are generally non-forested or less deviated from NRV. See Appendix G for detailed site conditions and desired conditions.

Cumulative effects.

As stated, the proposed action alternatives are expected to improve forest health and resiliency, reduce wildfire risk, and reduce risk of insect and disease caused mortality in the treated stands. Grazing within the planning area would continue with the likely effect of the treatments being more forage availability 1-5 years after treatment. No change in grazing allotments or Animal Unit Months (AUMs) is proposed with either alternative and so while reduced forest stocking would likely allow more grass and forb growth due to increased sunlight and water availability in the lower canopy layers, the number of AUMs would remain unchanged leading to more forage availability for wildlife. Grazing does have the effect of reducing grass biomass during their season of use (typically May – Oct.) which would have an additive effect of reducing fine fuel loading in the planning area and thereby working in concert with the proposed action to reduce wildfire risk.

The cumulative effects of the proposed alternatives would be additive to similar work being implemented and accomplished by other land management agencies present in the planning area such as the USFS and the MT DNRC as well as work being accomplished on private land through State and County grants. The effects of all these actions are expected to be large-scale movements toward protecting life, property and firefighter safety in and near the wildland-urban interface, reduction of wildfire risk in the area, large scale improved forest health and resiliency, and reduced risk of insect and disease caused mortality across the planning area. However as varying ownerships and funding sources are involved and given the large extent of the planning area (roughly 250,000 acres) not all these actions are taking place in the location or at the same time, leading to a gradual and phased transition.

The reasonably foreseeable actions are stated in section 3.2.2.1. See Appendix H for a complete list of reasonably foreseeable actions in the planning area for the next two decades.

Resource Issue 2

Issue 2 – How will the Proposed Action impact local and regional economies?

Affected Environment

Prior to Euro-American settlement in the area which began in the early 19th century, Native Americans had an economy based on barter and trade. The first non-native people in the area en masse were fur trappers who arrived in pursuit of beaver pelts and other furs of value which occurred not long after the Lewis and Clark Corps of Discovery passed through the area in 1806. The trappers traded with the Native Americans and with each other, gathering annually at rendezvous to trade pelts for cash and goods. The Native Americans also traded pelts to the white men in exchange for rifles, tools and other goods.

The trappers were followed by miners in pursuit of precious metals and by 1900 largescale mining operations were active in Western Montana. Loggers and cattlemen followed the gold booms to support and profit from the mining operations.

From Losenky's Historical Vegetation of Montana, 1997:

> *Settlement (of the area) began in the 1840's but it wasn't until the arrival of the Northern Pacific Railroad and development of the mines in Butte and Anaconda in the 1880s that there was any significant impact on the forest structure. By the 1890s major portions of the Clark Fork and Bitterroot Valleys had been logged. Leiberg reports "that below Grantsdale* (in the Bitterroot Valley*) fully 90 percent of the accessible merchantable timber has been cut (1899a).*

Many sawmills were built to support the growing towns and mining operations in the area including those that still operate in Deer Lodge, MT, Bonner, MT, and Seeley Lake, MT (just east, west, and north of the planning area, respectively).

As described, the local economies were dominated by mining, logging and ranching from the late 19th century until the mid-20th century. After WWII when the copper mining operations in Butte, MT and nearby areas peaked, mining has become a lessor contributor to the local economy, though some mining does still occur in the planning area.

Locally and across Montana, timber harvest levels which peaked on USFS lands in the 1960s have diminished in recent years and most mostly since the early-1990s. Harvest levels from private ownership remained high above USFS for many years (roughly 1963 through 2007), although these harvest levels too have significantly dropped since the early 2000s (See Figure 26 below). Along with this decline in timber harvesting, employment in the forest products industry declined as well.

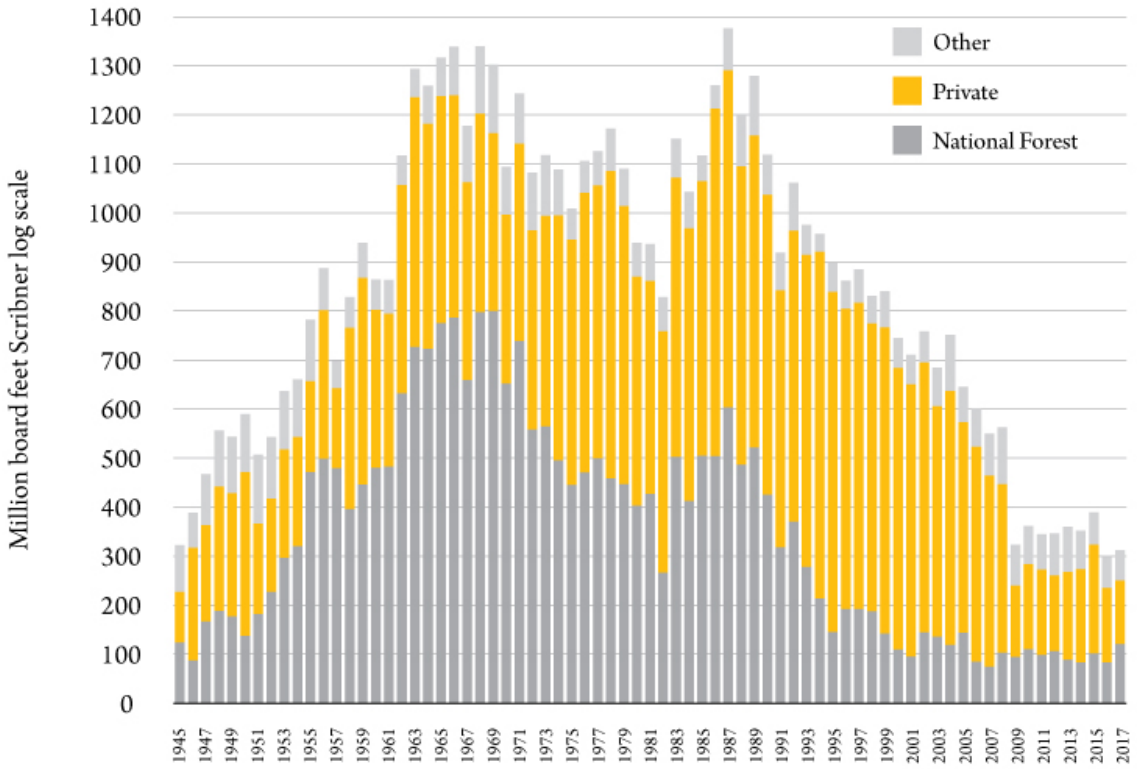


Figure 26: Montana timber harvest by ownership, 1945-2017. (Morgan et al. 2018)

As stated in the Montana Business Quarterly:

> *In 2000, wood and paper jobs were 28 percent of the state's manufacturing employment and 31 percent of labor income. In 2016, only 13 percent of jobs and 11 percent of income was generated by wood products manufacturing.*
>
> *The long decline of the wood products industry in Montana began in response to vigorous harvesting from the 1960s through the 1980s. Public campaigns to protect forest habitats, water and soil quality, and endangered species became national news.*
>
> *In response, the U.S. Forest Service and the Bureau of Land Management drastically reduced timber harvests on federal forests nationwide – nearly every western state was affected. Montana's total timber harvests retreated from 1.3 billion board feet in 1987 to less than 300 million board feet in 2016. In the same time period, lumber production fell from 1.6 billion board feet to barely 500 million board feet, and wood product sales declined from $1.8 billion to less than $565 million* (Smith et al. 2018).

Within the last two decades as harvest levels dropped, private industrial timber lands became more valuable for real estate development than timber production, land ownership patterns began

to shift away from large private industrial forestlands to small non-industrial (residential) ownerships.

As stated in the Montana Business Quarterly:

> *Over the past 20 years, there has been a major shift in timberland ownership in Montana. More than half a million acres of industrial timberland has been sold and transferred to various state, federal and other nongovernmental or private landowners. Some of this timberland is no longer actively managed for timber production* (Smith et al. 2018).

This land ownership shift has resulted in structures and private development extended further and further into the forestlands and has also resulted in a loss of recreational opportunity on the industrial forestlands which were often managed as pseudo-public land, with hunting, camping, snow machining and other recreation freely available. As evidenced by aerial photography, development within the planning area has greatly increased in the last several decades (see Figure 27 below).

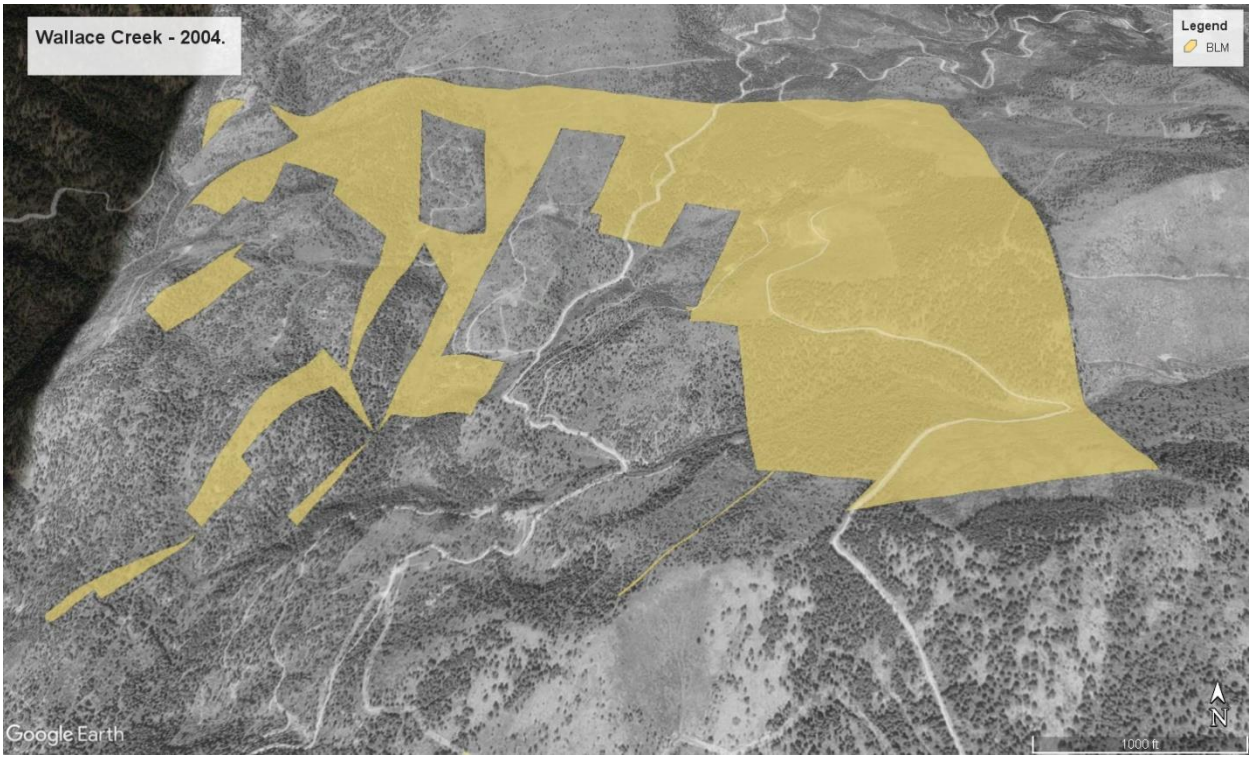


Figure 27: Google Earth imagery from 2004 of Wallace Creek within the CFF planning area.

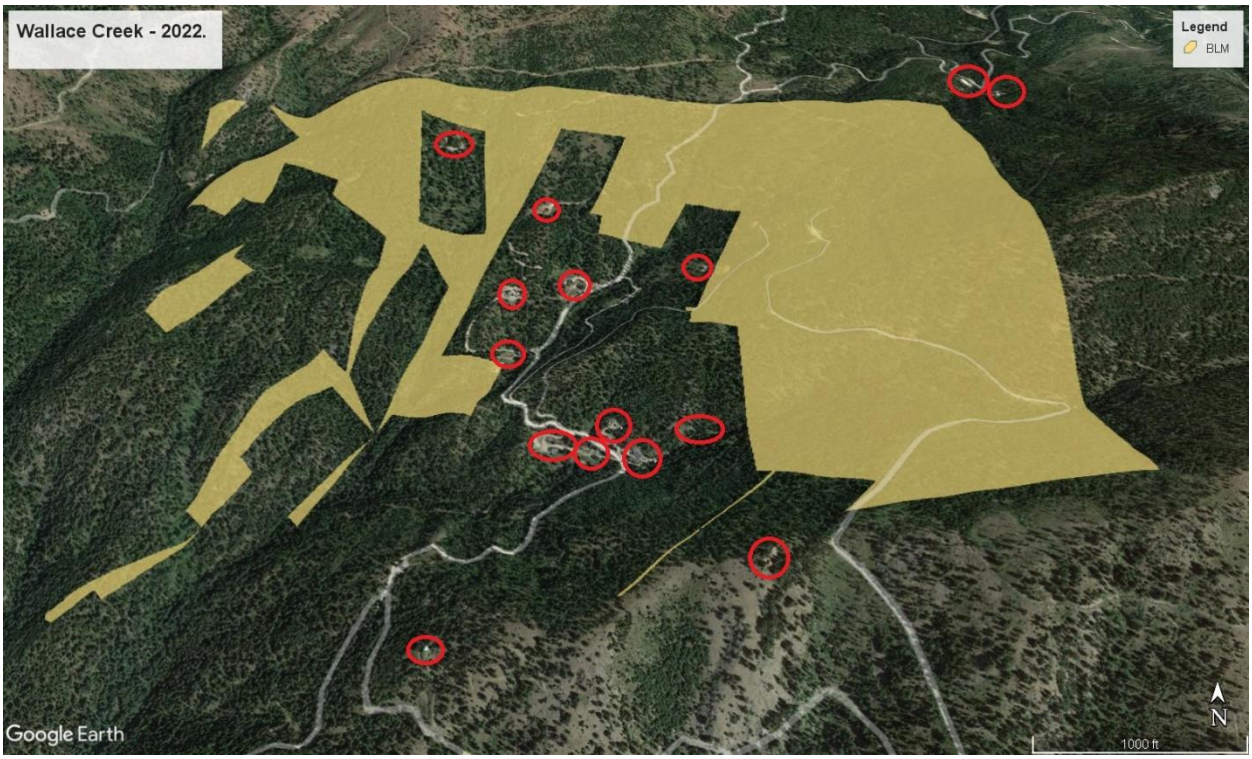


Figure 28: Google Earth imagery of Wallace Creek within the CFF planning area from 2022 with structures circled in red. The CFF planning area has experienced rapid residential development adjacent to BLM ownership (yellow shaded) in the last two decades.

In recent years (early 2000s and on) tourism and outdoor recreation have become greater contributors to local economies. Often considered to be inspired by the 1992 film "A River Runs Through It" which was based on Norman McClean's accounts of growing up on the Clark Fork and Blackfoot Rivers along with more recent effects from the COVID19 pandemic and other social and demographic factors, more and more people are moving to western Montana and the Clark Fork region or finding it an attractive place to vacation or buy a recreational property. The rising price of real estate in western Montana has contributed greatly to the local economies and represents the next great shift in land use, where lands are valued less for extractive resources and more for urban development.

From the 2020 US Census, Montana's population has increased 9.6% from 2010 – 2020, adding roughly 95,000 individuals and now (as of 2020) has exceeded 1,000,000 people for the first time. Within the planning area, Missoula is among Montana's top three most populous counties (Source: https://www.census.gov/library/stories/state-by-state/montana-population-change-between-census-decade.html).

In that light, where > 50% of the planning area is privately owned, and more and more private land is becoming developed each year, the public lands in the area are becoming increasingly important to the local economies, both traditional and contemporary. By providing habitats for big game such as deer, elk and black bear, public lands are in great demand for local and out-of-state-hunters. By providing aesthetically pleasing viewsheds, the public land is in great demand for real estate developers and private landowners. By providing year-round outdoor recreation

from hiking and biking to OHV and snowmachine opportunities the public land is in great demand for recreationists. And too, the public lands provide some of the last opportunities for sustainably managed timber in the area, benefiting the remaining forest products industry and economies both locally and regionally.

Environmental Effects—No Action Alternative

The No Action alternative would result in no implementation of the proposed action. There would be no production of forest products and no resulting benefit to local and regional economies. The decline of traditional economies would be compounded, and the loss of local jobs exacerbated. With the reduction of workforce in the forest products sector, implementing forest treatments both commercial and non-commercial (revenue and non-revenue producing) becomes more difficult and costly. On a long enough timeline, the very real loss of infrastructure in the forestry sector may eventually limit and/or eliminate the opportunity for forest management and fuels reduction projects in the future.

With the No Action Alternative, there would be no reduction in the forest's present risk of catastrophic wildfire and resulting threat to private values at risk. There would be no decrease in the forest's susceptibility to forest pests and no preservation of the forestland's scenic value which is expected decrease if large scale wildfire or forest pests kill large swaths of forest.

3.0.1.2 Reasonably Foreseeable Actions Effects

With no action alternative, the trend of decreasing timber production across the regional and local level is expected to continue with annual infrastructure loss in the forestry sector eventually leading to a loss of opportunities to manage forests as stated above.

The remaining large private landownerships are expected to be divided and sold into small ownerships as the trend of subdivision and development continues. More people are expected to move into the area, pushed out of areas of higher development by real estate costs and the opportunity to create their own place.

Costs of fire suppression are expected to increase and forest pests continue to cause mortality in the forested stands and fuels accumulate unabated. Recent wildfire trends indicate that larger and larger fire will impact the landscape, bringing with them ever greater suppression, rehabilitation and restoration costs to local, state and federal agencies, as well as private landowners and insurance companies.

Environmental Effects—Alternative 2 (Proposed) and Alternative 2b (Sub-Alternative)

One quantifiable measure of how the alternatives would impact local and regional economies, is dimensional lumber production from proposed timber harvesting and prescribed fire treatments. Some commonly stated estimates are that the average contemporary home uses 6.3 board feet of lumber per square foot (SQFT), and the average American home is 2,261 SQFT. Based on those estimates, an average home uses 14,244 board feet of lumber for construction. Under the Proposed Action, project is estimated to yield 50 million board feet over the next decade, the

equivalent of the volume needed to build 3,510 homes. Under the sub-alternative, project is estimated to yield 34 million board feet over the next decade, the equivalent of the volume needed to build 2,387 homes.

In its 2015 report, the National Association of Home Builders (NAHB) estimated the one-year impacts of building 100 single-family homes in a typical local area include, $28.7 million in local income, $3.6 million in taxes and other revenue for local governments, and 394 local jobs (NAHB 2015). Under the proposed action, this project is expected to yield 5 million board feet annually (fifty million board feet over ten years), enough timber to build 351 homes per year. That means the estimated economic impact per year from the proposed action from timber harvesting and prescribed fire treatments alone is $100.45 million in local income, $12.6 million in taxes and other revenue for local governments, and 1,379 local jobs (based on the numbers from NAHB 2015 expanded to 350 homes per year).

Under the sub-alternative, this project is expected to yield 3.4 million board feet annually (thirty-four million board feet over ten years), enough timber to build 239 homes per year. That means the estimated economic impact per year from the sub-alternative actions from timber harvesting and prescribed fire treatments alone is $68.5 million in local income, $8.6 million in taxes and other revenue for local governments, and 942 local jobs (based on the numbers from NAHB 2015 expanded to 239 homes per year).

Expanded out to over 3,500 homes (or 2,400 for the sub alternative) over ten years that is a very significant economic impact, and it is not limited to the local economy. Based on local observations, timber harvested from Western Montana is often hauled up to 200 miles before being processed and transported even further to retail outlets. In this way it becomes clear that while this project was not designed for timber volume production alone, this action would certainly have a substantial impact on the local and regional economies.

In addition to the timber harvesting and prescribed fire treatment, the other treatments (fuels management, thinning, limber pine enhancement and prescribed fire) would have beneficial economic impacts as well.

A comparatively smaller number of jobs would be created or sustained through implementation of these treatments which largely rely on manual laborers or heavy equipment operators. However, since many of the jobs which are bolstered through the timber harvesting and prescribed fire treatment require the same skill set as required for the other treatments (timber felling or prescribed fire specialists for example) the effects of the full suite of treatments would be cumulative on local jobs and economy.

As stated above, a primary objective of this project is to protect life, property and firefighter safety in and near the wildland-urban interface. On its website American Family Insurance (AMFAM.com) states costs can average anywhere from $3,000 to $5,000 to recover and restore a home after a small fire. Larger fires that destroy the roof or kitchen can cost as high as $50,000 and up. Based on 2021 data from the Montana State Library, there are 2,629 structures within the planning area (see Appendix D. Maps 9.9 and 9.10). While many of those are in rural communities such as Clinton, MT many too are located near and adjacent to the BLM forestlands, see the maps in Sections 9.9 and 9.10 in the Appendix D for locations of structures

in the planning area. Were these homes and buildings to burn due to a wildfire in those 2 subdrainages, based on the figures above the cost to individuals and insurance companies could easily exceed $2,000,000.

This is not a vague possibility; in the last two decades we have seen seven significant fires escape initial attack including the Ryan Gulch Fire in 2000 (17,100 acres), Dirty Ike Fire in 2003 (824 acres), the Packer Gulch Fire in 2006 (3,059 acres), the Mile Marker 124 Fire in 2007 (6,493 acres), the Felan Gulch in 2012 (177 acres), the Nimrod Fire in 2013 (603 acres), and the Anderson Hill Fire in 2021 (745 acres). Combined these fires have burned 25,440 acres or 10 percent of the planning area, and 684 acres or 3 percent of BLM lands in the planning area. Three of those fires involved structure losses: the Ryan Gulch fire had 2 structures lost; the Packer Gulch fire had 3 structures lost and the Anderson Hill Fire destroyed 1 structure.

See Appendix D, Map 9.12 fire history for location and extent of fires.

Through Fuels Management and the other proposed treatments, a primary objective of this project is to reduce the potential for fires which ignite on the BLM forestlands to impact or damage those homes and values at risk and benefit the local individuals and communities through protection from loss or restoration costs.

In addition to the anticipated savings due to protection from loss represented above, reduced fuel loadings and improved fire resiliency in forest stands would reduce the cost of fire suppression, which in these areas is provided by the USFS and the MT DNRC. In its 2013 report "Wildland Fire Research", Headwater Economics states:

> *At the national level, fire costs represent nearly half of the U.S. Forest Service's budget and total expenses have exceeded $3 billion annually, more than twice what it cost a decade ago.*
>
> *Using Montana as a case study, Headwaters Economics found that protecting the average home from a wildfire event costs roughly $8,000 and that 27 percent of firefighting costs are attributable to protecting homes in the WUI. Statewide, protecting homes from forest fires costs an average of $28 million annually. If development on private land near fire-prone forests continues, costs associated with home protection likely will rise to $40 million by 2025.*
>
> (Summary: Wildland fire research. 2013)

The current trend of development in the forested landscape is not expected to reverse, although it could slow as the real estate market corrects and interest rates increase. Regardless, the roughly 2,600 homes and structures currently within the planning area represent a potential $20,800,000 in suppression costs based on the figures above. Treatments proposed with this Alternative are expected to reduce suppression costs significantly and reduce the forests likelihood of producing catastrophic wildfires, thereby by saving national, state, and local taxpayer dollars and agency operating budgets.

Cumulative Effects

The reasonably foreseeable actions are stated in section 3.3.2.1. The proposed action is expected to contribute to local and regional economies both through commodity production and reduced restoration and fire suppression costs. The cumulative effects of these actions would be additive to similar work being implemented and accomplished by other land management agencies present in the planning area such and the USFS and the MT DNRC as well as work being accomplished on private land through State and County grants. The compounding effects of all these actions are expected to be a large-scale reduction in the wildfire risk in the area, sustained workforce in the forestry sector in western Montana, and reduced fire suppression costs at large. See Appendix H for a complete list of reasonably foreseeable actions in the planning area for the next two decades.

Resource Issue 3

Affected Environment Issue 3- How will the Proposed Action impact Canada lynx and Canada lynx critical habitat; grizzly bear and their habitat; and the contiguous U.S. wolverine Distinct Population Segment?

Affected Environment

Interstate highway US-90 and the Clark Fork River run along the southern edge of the Project area. The analysis area includes developed and dispersed recreation sites, cabins and residences. A mosaic of land ownership characterizes the analysis area including 56% private lands (see table 1). Historically, much of the analysis area was used for industrial timber production mixed with large and small mining operations roughly during the period 1850-2000, and former townsites exist within the area.

Currently, the analysis area is popular for numerous recreational activities including camping, river sports, snowmobiling, hunting, fishing, hiking, skiing, UTV riding, and mountain biking. The BLM lands are grazed by cattle to varying degrees, typically at light to moderate levels. Ongoing activities include small-scale mining, homesite development, road construction (including into newly purchased parcels), and fire suppression. Subdivision of former industrial timber lands has led in part to a large increase in structures since 2000. Montana State Library data showed 2629 structures in the Project Area on Dec. 30, 2020 (see figure 9.7 in Appendix D). Small scale timber harvest and fuels treatments including thinning and pile burning are ongoing, with planned projects discussed in the next section.

Grizzly bear:

The analysis area for grizzly bears was the 247,191-acre (386.2-mi^2) planning area. This area would be large enough to include multiple (roughly 4 to 10) female grizzly bear home ranges. A 30-year timeframe was used to analyze potential project effects on grizzly bears. This timeframe includes the predicted 5–15-year project duration plus time for initial forest regeneration to occur.

Grizzly bears are federally protected as a threatened species under the Endangered Species Act (PL 93-205, as amended). The 2013 draft NCDE Grizzly Bear Conservation Strategy (USDI-FWS 2013) and the 2019 Conservation strategy for the grizzly bear in the Northern Continental Divide Ecosystem (NCDE) (NCDE Subcommittee 2019) established a zoned system to support grizzly bear range expansion and recovery in the Northern Continental Divide region. The CFF planning area includes lands in NCDE Zone 1, NCDE Zone 2, and lands not within an NCDE category.

Grizzlies have expanded their range in the NCDE in recent decades, with males, females, and females with cubs documented in the planning area. Information regarding grizzly bear use in and near the planning area was collected from the MT FWP 2021 Annual Report (Sells et al. 2021), and through phone conversations and email exchanges with MT FWP biologist Jamie Jonkel (Oct. 2021 and March 2022), and USFWS grizzly bear office biologist Jennifer Fortin-Noreus (March 2022). Five grizzly bear dens have been documented in different locations within the Garnet Range in the last 20 years. For the past 5 years in the Nevada Valley (approx. 12 miles north of the planning area) as many as 40 grizzly bears have been documented at a given time feeding in hay and other agricultural fields during summer months. MT FWP considers the planning area to be an important "steppingstone" for linkage between grizzly population centers. An adult male grizzly was recently documented using areas both north and south of I-90 in and near the planning area, and denning south of the interstate (Adams and Cast 2021, Cast 2022).

As a habitat generalist, grizzly bears utilize a wide range of habitats for foraging/hunting and cover/security. Grass, forbs, berries, insects, rodents and ungulates comprise the primary food sources for grizzly bears. The planning area is not limited in general foraging habitat suitability, with a diverse mosaic of habitats across the 247,191-acre area supporting vegetation and prey species. Road density and secure habitat availability are considered primary indicators of habitat suitability for the NCDE grizzly population.

Roads open to public motorized use (open roads) have been found to diminish grizzly bear habitat suitability. Human disturbance associated with these roads displace grizzly bears from otherwise suitable foraging and cover habitats and increase potential for human/bear conflicts, and some grizzlies avoid roads. Open road density in the planning area is relatively high (2.46 mi /mi^2), with an open road density of 3.49 mi/mi^2 on BLM-managed lands in the planning area. Road density is negatively correlated with grizzly bear secure habitat, generally meaning blocks of habitat more than 500m from a road. Approximately 2.5% of proposed treatments occur in secure habitat, greater than 500m from existing roads.

Canada Lynx:

The USFWS listed Canada lynx as a threatened species in 2000. Lynx populations in Montana occur in the southern portion of a widely distributed metapopulation whose core is in the northern boreal forests of Alaska and Canada (Interagency Lynx Biology Team 2013). Lynx populations are tied to snowshoe hare populations cycles. Southern snowshoe hare populations exist at lower densities than northern populations and do not appear to be as cyclic (Hodges 2000, Koehler and Aubry 1994). Lynx densities are naturally lower in Montana and have average home ranges nearly twice the size of populations in the northern boreal forests (Aubry et al. 2000, Murray et al. 2008, MNHP 2022a).

Squires and Laurion (2000) found median home range sizes for lynx in Montana to be 92 ± 1mi^2 for males and 44 ± 19 mi^2 for females. The Garnet Range contains the southern-most lynx population in Montana, except for a few individuals documented in the Greater Yellowstone Area. From 1999–2006, reproduction was documented at 57 dens of 19 female lynx in Seeley Lake, the Garnet Range, and the Purcell Mountains in western Montana (Squires et al. 2008, Interagency Lynx Biology Team 2013). The last lynx observation reported to the BLM in the analysis area (all 4 LAUs) was in 2010, and the last lynx observation documented in the planning area was in 1998. In 2016, a lynx detection was reported 10.6 miles north of the planning area.

Lynx habitat occurs in mesic coniferous forests that experience cold, snowy winters and provide a prey base of snowshoe hare (Interagency Lynx Biology Team 2013). Snowshoe hares require hiding and thermal cover and forage provided by multi-story forests with dense horizontal cover. We consider forest Habitat Type Groups (HTG) 4-6 suitable for lynx foraging or denning habitat, especially when the HTG nears climax condition. The climax tree species, typically subalpine fir and Engelmann spruce often mixed with lodgepole pine, allow the development of dense horizontal cover. Moist Douglas-fir could also provide potential lynx foraging habitat in the advanced regeneration stage. However, when these stands reach mature condition large crowns tend to diminish the understory horizontal cover needed for snowshoe hare production.

For Canada lynx, the USFWS defines the action area for effects analysis as a Lynx Analysis Unit (LAU) or multiple LAUs. The Clark Fork Face analysis area for lynx includes the acreage of the Bear Creek, Elk Creek, Union Creek and McElwain Complex LAUs, totaling 190,066 acres. In the Clark Fork Face planning area, 85,188 acres fall within an LAU (34.5% of the planning area). Approximately 19,790 LAU acres are on BLM land, and of those, 16,284 acres are proposed for treatment. The proposed treatments occur in 9 Habitat Type Groups (HTGs 1-9, described above). Potential lynx foraging or denning habitat was considered to exist in HTGs 4, 5 and 6, where subalpine fir or Engelmann spruce were included in the dominant cover type. Table 16 presents the acreage of proposed treatments in potential lynx habitat. Further analysis (Table 17) of stand phase revealed that a maximum of 248 acres of this potential lynx habitat existed in a stand phase that would provide current habitat for lynx (mature forest, stand initiation or stand regeneration), while 204 acres, in the stem exclusion phase, would not provide suitable habitat for snowshoe hare, the lynx' primary prey and did not currently offer lynx foraging or denning habitat.

Table 14: Acres of current dominant cover species in HTGs 4-6 within proposed CFF treatments by LAU.

Current Cover	Bear Creek LAU	Elk Creek LAU	Union Creek LAU	McElwain Complex LAU	Grand Total
HTG 4 (Total)	172.32	129.73	49.51	0.00	351.57
DF-AF	76.35	77.70	39.51	0.00	193.56
DF-ES	71.69	51.32	10.00	0.00	133.00
DF-LP-AF	9.11	0.00	0.00	0.00	9.11
LP-AF	15.17	0.72	0.00	0.00	15.89
HTG 5 (Total)	41.14	4.12	0.00	0.67	45.93
LP-AF	41.14	4.12	0.00	0.67	45.93
HTG 6 (Total)	37.39	2.92	0.00	14.18	54.49

DF-AF	37.39	2.92	0.00	14.18	54.49
Total current lynx habitat	250.85	136.78	49.51	14.85	**451.98**
Not current lynx habitat (matrix habitat)	910.65	306.21	724.78	76.91	2,018.55

Table 15: Acres of potential lynx habitat and treatments proposed in each stand phase within affected LAUs.

LAU name	Total acres	Total potential lynx habitat within LAU	Stand initiation[1] phase (%)	Early stand initiation[2] acres (%)	Multi-story[3] (%)	Other[4]/Stem exclusion (%)
Bear Creek	50,856	561	3 (0.5%)	0 (0.0%)	112 (20.0%)	136 (24.2%)
Elk Creek	36,736	1371	0 (0.0%)	0 (0.0%)	64 (4.7%)	68 (5.0%)
McElwain Creek	76,061	4827	0 (0.0%)	0 (0.0%)	15 (0.3%)	0 (0.0%)
Union Creek	26,416	89	0 (0.0%)	0 (0.0%)	49 (55.1%)	0 (0.0%)
Grand Total	**190,069**	**6848**	**3 (0.04%)**	**0 (0.0%)**	**240 (3.5%)**	**204 (3.0%)**

[1]Stand initiation structural stage (SISS) that currently provides year-round snowshoe hare habitat because the trees have grown tall enough to protrude above the snow in winter.
[2]Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter but can provide snowshoe hare habitat during the non-winter months and is typically moving toward year-round snowshoe hare habitat.
[3] multi-story structural stage (MSSS) with many age classes and vegetation layers that provide year-round snowshoe hare habitat via dense horizontal cover.
[4]Other –Closed canopy lacking dense horizontal cover; does not provide snowshoe hare habitat due to lack of dense horizontal cover, e.g. Stem Exclusion Structural Stage**.**

Canada Lynx Critical Habitat:

The analysis area for lynx critical habitat is the entire area of the 4 LAUs that overlap the CFF planning area, totaling 190,066 acres. In 2009, the USFWS designated critical habitat for lynx (Federal Register Vol. 74 No. 36 pp. 8616–8701), with a revision in 2014 (USDI-FWS 2014). The Primary Constituent Element (PCE) of lynx habitat is defined as (1) boreal forest landscapes supporting a mosaic of differing successional forest stages and containing:

- 1(a). Presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow, and mature multi-story stands with conifer boughs touching the snow surface;
- 1(b). Winter snow conditions that are generally deep and fluffy for extended periods of time;
- 1(c). Sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and

- 1(d). Matrix habitat (e.g., hardwood forest, dry forest, non-forest) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

The Lynx Analysis Area contains a mix of habitats including 26,729 acres of habitat classified as HTGs 4, 5 or 6 which could offer PCE 1a, 1b and/or 1c. Of those, 2471 acres in HTG 4-6 were within a proposed treatment unit (2,183 acres in the sub alternative). As described above, 452 of those acres (408 acres in the sub alternative) included Engelmann spruce or subalpine fir in the dominant cover type, and a maximum of 248 of those acres (221 acres in the sub alternative) existed in a stand phase that could provide current lynx foraging or denning habitat. All of those 248 acres (221 in the sub alternative) of current lynx habitat were located in the functional WUI (within 1 mile of private structures) or Fire Management Zone 1. The remaining acres proposed for treatment in LAUs overlapping the lynx analysis area would constitute potential matrix habitat providing landscape connectivity to support lynx population (PCE 1d).

However, as shown above, 204 of those acres are currently in the Other (stem exclusion) stand phase and do not provide the resources necessary for snowshoe hare at present. Thus, treatments are proposed for approximately 248 acres of current lynx habitat offering PCEs 1a, 1b, or 1c.

North American Wolverine:

The action area for this analysis includes the portion of female wolverine dispersal habitat within the planning area where forest treatments will predominantly occur, extending north into the Garnet Special Recreation Management Area (GSRMA). This area can also be used by dispersing males. Although modeling shows 3 parcels of primary habitat w/i the Garnets, this is atypical and not representative of higher elevation primary habitat preferred by wolverine (Figure 29). Although it's a large area, it makes biological sense as it relates to wolverines' ability to move and use the habitat in order to meets some of its biological requirements. Wolverine are often reclusive; therefore, they are more likely to use the action area because its less fragmented and provides more security and opportunity for movement and feeding, especially for individuals moving to or from adjacent areas such as the BLM Hoodoos, Blackfoot and Marcum SRMA's, or higher elevation habitats in surrounding USFS lands. Within the GSRMA is the Wales Creek Wilderness Study Area (WSA) consisting of approximately 11,580 acres of rugged canyons and forested lands located along the eastern slopes of the Garnet Mountain Range. Total acreage for the action area is 96,757 acres. Although, female dispersal habitat is modeled on the western side of the planning area (not showing), north of I-90, these are isolated parcels located on DNRC and Nature Conservancy Lands where effects of the proposed action will not occur. See Appendix D for proposed permanent and temporary road construction breakdown w/i the action area. The timeframe of analysis will be 30 years, allowing for the completion of all proposed treatments (a 5-10-year period plus 5 years of potential monitoring or tree planting) and initial regeneration of forest stands.

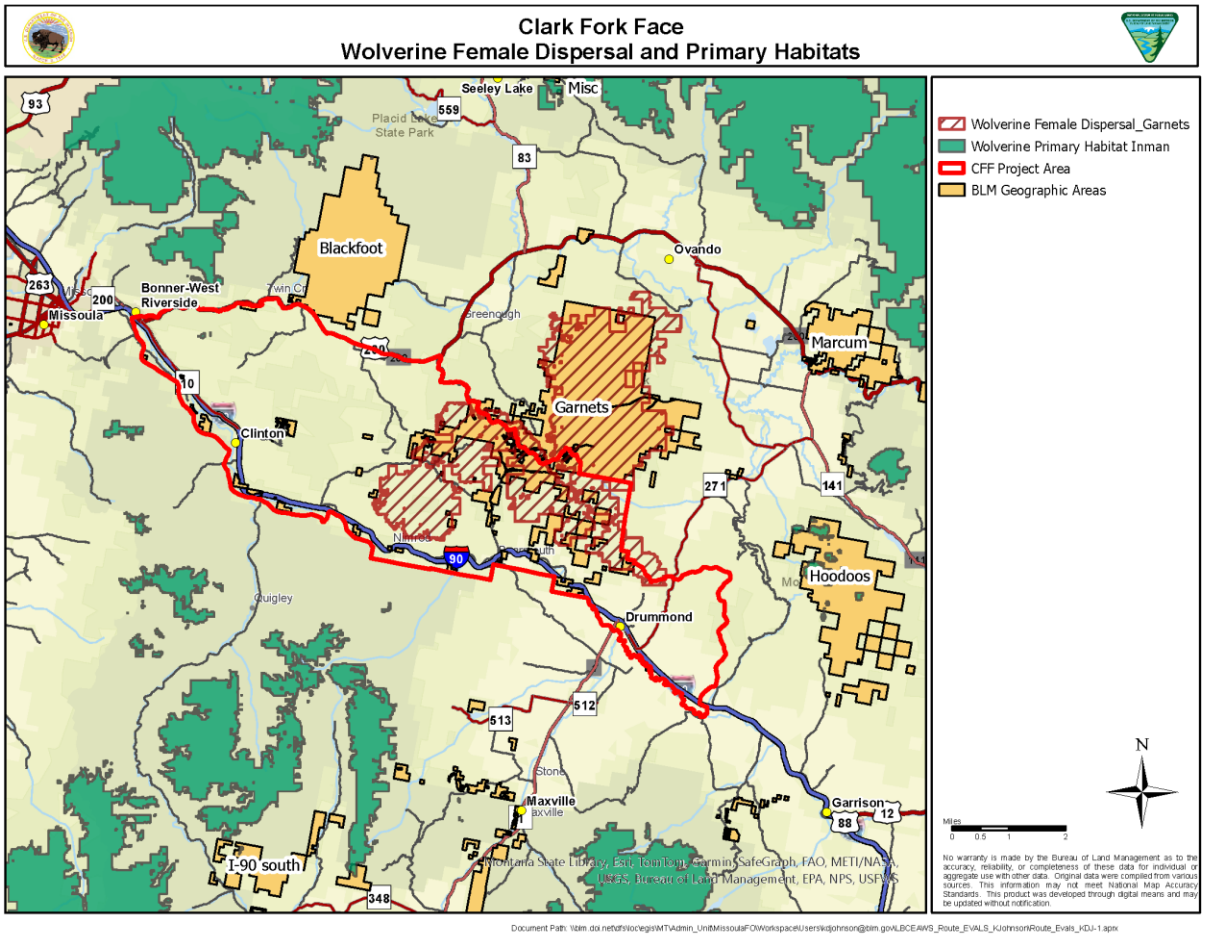


Figure 29: The Action Area for North American Wolverine is the female dispersal habitat within the Garnet Mountains.

CFF Proposed Road Construction within Garnets Wolverine Female Dispersal Habitat	
Construction Class	Length Miles
Proposed Construction Perm	9.41
Proposed Construction Temp	4.83
Grand Total	**14.24**

Figure 30: Road Construction confined to the Action Area

ESA Listing History and Threats

In February 2013, USFWS published a proposal to list the contiguous U.S. DPS of the North American wolverine (*Gulu gulo luscus*) as Threatened under the Endangered Species Act, except where it was listed as an experimental population (USDI Fish and Wildlife Service 2013).

Climate change and inadequacy of existing mechanisms to regulate climate change were considered primary threats, with small population size and harvesting/trapping deemed secondary threats. The following year, the FWS withdrew the proposed rule. After legal challenges, the District Court for the District of Montana vacated the withdrawal of the proposed rule, the FWS reopened comment and initiated a new status Species Status Assessment (USDI Fish and Wildlife Service 2018). In 2020, the agency again withdrew their 2013 proposed rule to list the DPS as threatened. Additional litigation followed, and the FWS requested a voluntary remand of that decision in spring 2022. In May 2022, the District Court for the District of Montana vacated the withdrawal of the proposed rule.

On November 30, 2023, the Service published a final rule to list the North American wolverine as threatened under the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 et seq.) (88 FR 83726), effective January 2, 2024. The Service concluded the contiguous U.S. DPS of the North American wolverine is a threatened species due primarily to the ongoing and increasing impacts of climate change and associated habitat degradation and fragmentation. Concurrent with the final listing determination on November 30, 2023, the Service also proposed an Interim 4(d) Rule. Consistent with section 4(d) of the Act, this interim 4(d) rule provides measures that are tailored to the current understanding of the conservation needs of wolverine, in part by allowing exceptions to the general prohibitions against “take” of the species in support of conservation actions and otherwise lawful activities that could take wolverines but at minimal levels not likely to have a negative effect on the species' conservation.

As it may relate to the Clark Fork-Face project, under this interim 4(d) rule, incidental take caused by forest vegetation management for the purpose of wildfire mitigation that promotes the long-term stability and diversity of forests will not be prohibited. Broadly, the forest vegetation and fire management activities referred to above may include, but are not limited to, silviculture practices and forest-management activities that address fuels management; insect and disease impacts; vegetation management in existing utility rights-of-way; and wildlife-habitat management, including planting seedlings or sowing seeds, mechanical cuttings as a restoration tool in stands experiencing advancing succession, full or partial suppression of fires, allowing fires to burn, and survey and monitoring of forest health. Because no forest vegetation management activities for the purposes of reducing the risk or severity of wildfire pose any threat to the North American wolverine at the DPS level, the Service purposefully do not specify in detail what types of these activities are included in this exception, or how, when, or where they must be conducted, as long as they are conducted in accordance with applicable law; these activities may also vary in how they are conducted across the DPS' wide range. Therefore, the interim 4(d) rule will facilitate the continuation of forest vegetation management activities because these activities pose no or minimal threats to the North American wolverine at the DPS level and result in only de minimis forms of take. Forest management can also contribute to the DPS's conservation into the future by maintaining overall forest health in and adjacent to wolverine habitat. This exception, and any relevant future section 7 consultations with Federal agencies, also allow for flexibility to accommodate specific physical conditions, resource needs, and constraints across the DPS's range.

Environmental Effects—No Action Alternative

The No Action Alternative would not implement the Proposed Action or 2b sub-alternative and would result in no acres treated on BLM lands in the planning area. The effects described under the proposed action and 2b sub-alternative to grizzly bear, Canada lynx and critical habitat, and the North American wolverine would not occur under the no action alternative. Without vegetation management to restore ecological health and reduce fire severity, the quantity and quality of suitable habitat for species would be reduced over time. Not implementing treatments is likely to result in a loss of diverse native plant communities, less resistance and resilience to forest insects and disease and increased potential for complete habitat loss and possible physical harm to grizzly bears, lynx and wolverine from catastrophic fire.

Reasonably Foreseeable Actions

Reasonably Foreseeable actions are described in Section 3.2.2.1. See Appendix H for a complete list of reasonably foreseeable actions in the planning area in the next two decades.

Energy or mineral development could occur, and no substantial projects are known to be currently planned. Formerly clearcut industrial timberlands can be expected to continue to regenerate and to produce dense stands of young trees where other forest treatments don't occur. Many of the existing human structures (2629 total structures recorded as of year 2020) are now surrounded by dense, young forest, leading to fire risk. We expect the number of structures to increase over coming decades, especially due to the sale of private timber company lands to individuals. Recreational uses and human presence may be expected to continue gradually increasing. Light to moderate cattle grazing is not expected to change in the foreseeable future.

Environmental Effects—Alternative 2 (Proposed Action) and Alternative 2b (sub-alternative)

The Missoula Field Office reviewed effects of the Clark Fork Face proposed action on federally listed threatened, endangered, and proposed species and determined that the proposed action may affect and is likely to adversely affect grizzly bears (*Ursus arctos horribilis*), Canada lynx (*Lynx canadensis*), and designated lynx critical habitat and is not likely to jeopardize the continued existence of wolverine (*Gulo gulo luscus*). The Missoula Field Office also determined that the proposed action would have no effect on western yellow-billed cuckoo (*Coccyzus americanus*) and whitebark pine (*Pinus albicaulis*) because those species and habitat are not present within the action area. Bull trout (*Salvelinus confluentus*) and bull trout designated critical habitat would not be affected due to factors associated with design features and conservation measures incorporated into the proposed action and distant proximity and local topography of vegetation treatments and haul routes to occupied bull trout habitat and bull trout designated critical habitat.

Direct, indirect and cumulative effects to grizzly bear and their habitat, Canada lynx, and Canada lynx critical habitat and wolverine are described in more detail, with specific data and tables to support the following summary, in the Biological Opinion (BO) for the Clark Fork Face project (USDI-FWS 2023). The Missoula Field Office sent the biological assessment and official correspondence to request the initiation of formal consultation from to the US Fish and Wildlife Service on April 28th, 2022. Supplemental documents were submitted on June 6, 2022,

August 19, 2022, September 24, 2022, and Oct. 20, 2022. The BA disclosed the effects of the proposed action on grizzly bear, Canada lynx, Canada lynx Designated Critical Habitat, and North American wolverine. The consultation for the Clark Fork Face Project is a second-tier consultation. The intent of this second-tier consultation was to evaluate whether the adverse effects related to the Clark Fork Face Project are consistent with the 2020 programmatic biological opinion for the Missoula Field Office Resource Management Plan and associated incidental take statement. On November 8, 2022, the USFWS issued a Biological Opinion (BO) on the Clark Fork Face project (USDI-FWS 2023) and a Letter of Concurrence was issued on April 11, 2024, for the reinitiation of consultation for North American Wolverine.

Direct, Indirect and Cumulative Effects Analysis:

Grizzly Bear

Under the proposed action and 2b (sub-alternative) to a lesser extent, forest treatments and associated activities would have short-term effects to grizzly bears associated with disturbance and possible displacement from temporary increased human presence and heavy equipment use. Effects may increase energy expenditure, decrease fat deposition and lessen reproductive success. Forest treatments and associated activities may also increase the risk of grizzly/human conflict when humans and bears interact, and or where bears receive a food reward from attractants. However, these effects are expected to be minimized by spatial and temporal factors limiting the disturbance footprint within any season and allowing a bear/s/ to displace into nearby habitats which are primarily areas of similar forest type that can support their biological requirements. Grizzly bears are also generalists, adaptable and opportunistic by nature, therefore, displacement is expected to be temporary once bears see opportunity for cover and food through regenerating native shrub and grassland habitat and resources such as small and large mammals, invertebrates, plants and berries. Project implementation would occur within limited treatment blocks over a 5–15-year period. The proposed treatment area comprises 7.7% percent (19,147 acres) and 14,662 acres, 2b (sub-alternative) of the overall 247,191-acre planning area. Treatments would take place within only a portion of that area in any one season. For example, if 10% of the total acres were treated each season for 10 years, that would be less than 1% of the planning area per year.). Some areas would be visited in a subsequent season for prescribed burning or tree planting causing the project to cover a maximum of 15 years, while the proposed vegetation treatments are likely be completed within a shorter 5 – 10-year timeframe.

For treatment areas without prescribed burning, shrub cover is expected to remain to some level post treatment where vegetation has not been incidentally damaged or removed. Harvest and thinning treatments would open canopies and create conditions where the understory would regenerate and improve the quality and quantity of native vegetation beyond existing conditions. Where prescribed burning is used, herbaceous and shrub cover would predominantly be lost immediately post treatment but is expected to begin regenerating within 1-2 years. Cover and food resources such as small and large mammals, invertebrates, plants and berries would respond positively to the regeneration and enhancement of native shrub and grassland habitat. This would benefit bears in the short and long term through increased caloric intake and fat accumulation, and more energy to sustain themselves and for reproductive success. Much of the non-BLM lands in the planning area can offer habitat for bears to temporarily displace. Non-BLM planning area lands are managed by The Nature Conservancy, Montana DNRC, USDA Forest

Service and other private landowners. These lands offer forest cover and non-forested grasslands that can provide habitat and resources that meet the biological requirements of bears. Over 205,000 acres of the planning area contain forest or non-forested grassland habitat types. Private lands and Stimson Lumber Company lands comprise 56.1% (138,564 acres) of the planning area, while the BLM manages 9.5% of the planning area (23,666 acres). Stimson Lumber Company is no longer actively managing timber in this area and has been gradually selling parcels to other private ownership. The Nature Conservancy manages 11.8% of the planning area (29,242 acres) and the remaining 22.5% of the planning area (55,719 acres) are managed as State of Montana and US Forest Service lands (Table 1).

Under the proposed action, no new open motorized roads would be constructed, therefore associated effects would not occur. The newly constructed roads would be for administrative use only. New road construction would occur overwhelmingly in areas already dominated by structures and roads, 97.5% of proposed permanent roads and 93.0% of proposed temporary roads in NCDE Zone 1 would be located within the 500 m buffer of existing roads and structures. In NCDE Zone 2, 95.2% of proposed permanent roads and 95.7% of proposed temporary roads would be built within the 500 m buffer area. These results indicate that proposed road building is not expected to affect secure grizzly bear habitat (habitats that are >500 meters from existing roads (IGBC 1994, 1998)) because road building would occur quite close to existing roads and structures. Due to the proximity of the proposed new roads to existing roads (overwhelmingly within 500 meters) and structures, and the fact that these roads would be closed to public motorized use, the proposed roads are not expected to decrease secure grizzly bear habitat (habitats that are >500 meters from existing roads (IGBC 1994, 1998)). Research suggests that grizzly bears benefit from road closures aimed at minimizing traffic on roads within important seasonal habitat, especially in low elevation habitats during the spring (Proctor et al. 2019, McLellan 2015, Mace et al. 1999). The new closed roads are not expected to substantially alter grizzly bear use of the area because the limited mileage of roads would not substantially change the current character of the area (frequent human use, roads, dwellings). While disturbance could cause short-term effects to individual bear energy expenditure and fat deposition, secure grizzly habitat would be minimally affected by this project because activities would be temporally and spatially managed over a 5-15-yer period, The USFWS 2022 review of the Clark Fork Face Project, and subsequent Biological Opinion dated, November 8, 2022 concluded "*the existing motorized access conditions of the Garnet (Chamberlain) geographic area and the temporary road construction and use associated with the proposed action are consistent with our analyses of effects on grizzly bears in the 2020 programmatic biological opinion* (MiFO RMP 2020) *and that the proposed action would be in compliance with the incidental take statement associated with that biological opinion. This second-tier analysis for the Clark Fork Face Project illustrates how these effects on grizzly bears fall within the scope of our 2020 programmatic biological opinion and associated incidental take statement. As described in our 2020 programmatic biological opinion, not all effects associated with temporary road construction and use are expected to be adverse."*

Under the sub-alternative, new administrative roads would not be constructed, therefore, the effects to grizzly bears associated with roads described above under the proposed action would not occur under the sub-alternative.

Over time, grizzlies are expected to benefit from the proposed action and the sub-alternative as it relates to restoring healthy ecological conditions and the decreased risk of high-severity fire after treatment implementation. Implementation of the proposed treatments, through burning, thinning and harvest would remove ladder fuels, fragment continuous crowns, reduce basal area, and reduce excessive fuel loads. These actions would help to restore heterogeneous landscape structures that create a diversity of habitats and foods valuable to grizzly bears. Shifting forest communities towards the NRV and reduction of risk of stand-replacing, high severity fire would benefit grizzlies by supporting habitat resiliency and maintaining suitable, diverse habitats and resources within the 30-year analysis timeframe. However, under the sub-alternative, although less disturbance to bears and habitat as described under the proposed action is expected, 4,845 less acres would be treated. Acres left untreated would not be managed within their natural range of variability to sustain native species and biodiversity and would remain a risk for high-severity fire. Overtime, without vegetation treatments, the quality and quantity of suitable habitat is likely to reduce and subsequently provide less value to bears.

Overall, the proposed action and sub-alternative are expected to affect individual grizzlies and habitat to varying degrees, however, the conservation measures are expected to help avoid and minimize the risk for effects. Treatments would benefit grizzly bears over time as forest health and resiliency restore ecological conditions that better meet the biological requirements of grizzly bears and minimize fire severity.

- Rationale for conclusion: The acreage of total vegetation treatments under the proposed action (19,147 acres) or sub alternative 2(b) 14,662 acres, are less than an average grizzly bear's home range and is spread across a 247,191-acre planning area.
- Only a small portion of the planning area would be affected in any season because implementation would occur over a 5-15-year period.
- In NCDE Zone 1, 98% of treatments, and in NCDE Zone 2, 95% of treatments would occur in areas that already experience substantial human disturbance and are not expected to increase effects to secure grizzly habitat.
- Under the proposed action, in NCDE Zone 1, 97.5% of new permanent roads, and in NCDE Zone 2, 95.2% of new permanent roads would occur within 500 m of current roads and structures, and not impact secure habitat. No new roads are proposed under the sub alternative 2b.
- Under the proposed action, all new roads would be physically closed to motorized use for the public. No new roads are proposed under the sub alternative 2b.
- Under the proposed action, in NCDE Zone 1, 93.0% of temporary roads, and in Zone 2, 95.7% of temporary roads would occur within 500m of existing roads and structures. No new roads are proposed under the sub alternative 2b.
- Under the proposed action, all temporary roads would be removed within 36 months of their construction. No new roads are proposed under the sub alternative 2b.
- Under the sub-alternative, new roads would not be constructed, Therefore, the effects to grizzly bears associated with roads would not occur.
- Under the sub-alternative, there would be less disturbance to bears and habitat due to the reduction in proposed treatment acres.
- Under the sub-alternative 4,845 fewer acres would be treated and managed within their natural range of variability to restore healthy ecological conditions.

- Long-term effects are expected to be largely beneficial. As the planning area faces increased development in the coming years, the forest health, habitat diversity and resiliency of BLM lands would become of greater importance to maintaining a healthy grizzly population.
- Conservation measures for grizzly bears have been incorporated into the Proposed Action and sub-alternative.
- The Missoula Field Office food storage strategy for conservation of the grizzly bear and other wildlife (BLM 2006) will be implemented and followed by all parties, minimizing the risk of human-bear conflict.

Canada Lynx

Under the proposed action alternative or the sub-alternative, disturbance, temporary displacement, increased energy expenditure and reduced reproductive success may occur due to increased human presence and heavy equipment use during treatment implementation, but these effects would be minimized by spatial and temporal factors of the project design, i.e., project implementation would occur within distinct treatment blocks over a 5–15-year period. Under the proposed action (16,284 acres) and sub-alternative (11,480 acres) only a portion of the acres of treatments in the Lynx Analysis Area would take place in any one season, i.e., treatments in any season would only affect a portion of any lynx's home range. Lynx are also expected to move away from the disturbance or to more to secure areas on adjacent public lands (43.9% of the planning area). Lynx that move to surrounding private lands (56.1% of the planning area) may encounter human activities that could cause them to move farther away from the larger disturbance. However, because the occupancy density of lynx is extremely low in the planning area (Squires et al. 2008, Interagency Lynx Biology Team 2013) the potential for effects is expected to be low and incidental if/when individuals are present.

While the proposed treatments may temporarily degrade the function of PCE 1a and/or PCE 1c habitat by altering or delaying the development of horizontal cover or removing coarse woody material, the treatments are not expected to affect the stands' potential to produce these PCEs in the future. In contrast, failure to treat these habitats that occur in locations and conditions at high risk for high severity fire could result in the loss of mature and advanced regeneration forest stand types for multiple decades. In the long-term, treatments can benefit lynx energetic balance, reproductive outputs and individual numbers. Proposed treatments are expected to increase pulses of disturbance that regenerate into snowshoe hare foraging habitat and provide connectivity to mature multi-story habitat although to a greater extent in the proposed action than sub-alternative. As treatment units reach advanced regeneration, snowshoe hare population densities could increase in HTG 4-6. Current acreages in the stem exclusion stand phase do not provide snowshoe hare habitat needed by lynx for foraging. The proposed action (and to a lesser extent, the sub alternative) would open these areas and increase their value for lynx and snowshoe hare.

Canada Lynx Critical Habitat

Current lynx habitat constitutes 0.001% of the lynx analysis area and planning area. The proposed action would treat approximately 243 acres of PCE 1a within FMZ 1 and 1-mile buffer of areas functioning as WUI. Lynx habitat within the sub-alternative action in PCE 1a is

approximately 221 acres within FMZ 1 and 1-mile buffer of areas functioning as WUI. While the proposed treatments under either the proposed action alternative or sub-alternative could temporarily degrade the function of PCE 1a habitat by altering or delaying the development of horizontal cover or removing coarse woody material, the treatments are not expected to affect the stands' potential to produce PCEs in the future. In fact, the development of PCEs is likely to accelerate post-treatment due to more advanced regeneration from open canopies and increased sunlight. In contrast, failure to treat these habitats that occur in locations and conditions at high risk for high-severity fire could result in the loss of mature and advanced regeneration forest stand types for multiple decades. Short-term effects to lynx critical habitat are expected to occur from ground disturbance and habitat modification during treatment implementation; however, they would be minimized by spatial and temporal factors, limiting the disturbance footprint affecting any PCE. Under the proposed action, other structural habitat features within the project area include 3 acres stand initiation structural stage, 240 acres of multistoried and 204 acres of other/closed canopy habitat. Structural features under the sub-alternative action include 1 acre stand initiation structural stage, 220 acres of multistoried and 188 acres of other/closed canopy habitat. These areas may offer PCE 1a or 1c, especially in the long term as ecological conditions are restored, but currently are at risk of insect and disease and stand-replacing fire without vegetation management. These acreages are well distributed among 4 LAUs and are not particularly concentrated. proposed treatments would not be concentrated within any single lynx home range. Project implementation would occur within small treatment blocks over a 5–15-year period. To preserve horizontal cover, prescribed burning would not be used under proposed action or sub-alternative within current lynx habitat, (243 & 221 acres respectfully). In these habitat acres, irregular thinning techniques such as VDT or ACT would be employed to minimize loss of dense understories by emulating natural stand structure. Where stands are converted to an early stand initiation phase, habitat would become valuable to lynx, typically within 5 years, providing PCA 1a, snowshoe hare prey, and providing increasing value PCA 1a habitat through stand development.

Treatments in lynx foraging habitat can cause short-term effects leading to disturbance and displacement of snowshoe hare (PCE 1a). Effects are minimized by the limited spatial footprint of disturbance in any one year and snowshoe hare habitat availability outside of treatment areas. Project design features for maintaining biological legacies and improving snags and large woody debris (including blowdown, deadfalls and root wads) would further minimize effects to denning habitat (PCA 1b). Wildlife buffers along ridges, saddles and riparian areas would maintain travel corridors and linkages in lynx critical habitat.

Long-term, vegetation treatments are expected to create dense horizontal cover within regenerating stands. Regenerating and mature multistory foraging and denning habitat would benefit from the removal of ladder fuels, opening of closed forest canopy, and resulting enhancement of the shrub community. The treatments would create and enhance a mosaic pattern of habitats across the landscape over space and time, with the goal of restoring NRV (USDI-BLM 2021). Overall, although to a greater extent in the proposed action than sub-alternative, the project is expected to create more suitable lynx critical habitat than currently exists, while increasing resiliency of this habitat structure, and reducing the risk of severe, stand replacing fire that can slow the rate of eventual regeneration.

Matrix habitat (PCA 1d) would be altered in a mosaic pattern across treatment units and on a small scale across all LAUs acres. The Lynx Conservation Assessment Strategy (LCAS) states that management-induced change of lynx habitat on federal lands that creates the early stand initiation structural stage should not exceed 30% of an LAU. The Clark Fork Face project complies with the LCAS guidelines because substantial areas of lynx habitat would be left untreated, patches of dense horizontal cover would remain; and no more than 15% of lynx habitat on federal lands within an LAU be changed to an early stand initiation structure within a 10-year period. The LCAS was fully revised more recently (Interagency Lynx Biology Team 2013) and continues to be the primary guidance for land management agencies in other regions across the range of the Canada lynx in the U.S (Interagency Western Lynx Biology Team 2022).

Overall, effects to Canada lynx and Canada lynx critical habitat are expected to be minimized by the following:

- The lynx analysis area covers 190,066 acres but only 0.1% of the 4 LAUs proposed for treatment in the proposed action alternative or the sub alternative 2b include currently suitable lynx habitat.
- Treatments would occur in different areas over a 5–15-year period, minimizing impacts to habitat and within any individual lynx home range in space and time.
- To preserve horizontal cover, prescribed burning would not be used under proposed action or sub-alternative within current lynx habitat to conserve horizontal cover.
- Thinning and timber harvest within current lynx habitat would be implemented to specifically conserve lynx habitat values including PCE 1a and PCE 1c (e.g. alternative thinning prescriptions, not removing shrub cover)
- Treatments would follow guidelines provided in the Northern Region Snag Management Protocol (USDA 2000) and Trees and Logs Important to Wildlife in the Interior Columbia River Basin (Bull et. Al 1997) to maintain and/or improve snag or large woody debris habitat (PCE 1c).
- Retaining biological legacies, such as large healthy trees, large decadent trees, snags, logs, and other coarse woody debris on the forest floor (PCE 1c).
- The Clark Fork Face project complies with the LCAS guidelines because substantial areas of lynx habitat would be left untreated, patches of dense horizontal cover would remain; and no more than 15% of lynx habitat on federal lands within an LAU be changed to an early stand initiation structure within a 10-year period.

North American Wolverine:

The physical and ecological requirements of wolverine are not fully represented throughout the action area; however, a variety of food resources are available at any given time period, including several big game species that would provide a carrion resource. The higher elevations (up to 6,844ft) w/i the roadless Wales Creek WSA exhibit habitat features that are more rugged with big canyons (minus talus slopes) that provide more security and are relatively difficult to access, especially during the winter. Although Inman 2013 modeled primary habitat within the GSRMA, its atypical condition more so represents male and female dispersal habitat. Overall, the rugged habitat attributes of the entire WSA may serve as good refugia for dispersing

wolverine from predators and human disturbance. The landscape would also facilitate better dispersal to preferred typical and more persistent physical and ecological features common of primary habitats found at higher elevations surrounding the action area.

On an average precipitation year, persistent spring snow can be expected, especially on the north slopes in more rugged canyon areas that get limited sun exposure. The North Fork of Elk Creek SNOTEL sensor (near Elevation Mountain 7,051ft) data collected just west of the WSA approximately 1 mile, at 6,250ft elevation (Figure 4), showed from 2014 through 2023, average snow depth was 26" of snow on May 1st. with a minimum value of 5" (2016) and maximum of 44" (2018). Although this average is below the 3-meter threshold, more severe winters (e.g., 2018) can increase snow depths, however, climate change models predict this will not be the long-term trend. Overall, the Wales Creek WSA and surrounding higher elevation habitat w/i the Garnets including the Elevation Mountain (7,051ft), Lost Horse Mountain (6,263 ft) and Granite Mountain (6,893 ft) ranges have less roads and more security for dispersal as compared to the southern extent of the action area w/i and around where forest treatments will occur.

Wolverine Occurrence

Using the best available science from the listing and a search of data compiled by the Montana Natural Heritage Program (2023) and Swan Valley Connection's Southwest Crown Continent rare carnivore monitoring program, 7 wolverine detections were documented within the action area, the most recent in 2009. However, wolverine are known for large home range sizes, high intrasexual territoriality, and their ability to disperse long distances, sometimes hundreds of miles in straight-line distance (Packila et al., 2017; Vangen et al., 2001), but since the action area is all dispersal habitat, the establishment of a home range would not be expected. Using the MTNHP data and a radius of 50 miles from the center of the project area, between 1932 - 2023, 833 wolverine were documented: 2016 being the highest at 126 (Figure 29). Overwhelmingly, these records are in surrounding areas of mixed ownership, predominantly USFS (Figure 30). Most recently, a wolverine was documented at a camera station w/i the BLM Hoodoos SRMA (Swan Valley Connections 2024). The 50-mile radius was chosen because it provides a broader view of the swift change in habitat suitability (per Inman 2013) of the project area within the valley bottoms as compared to the immediate surrounding landscape.

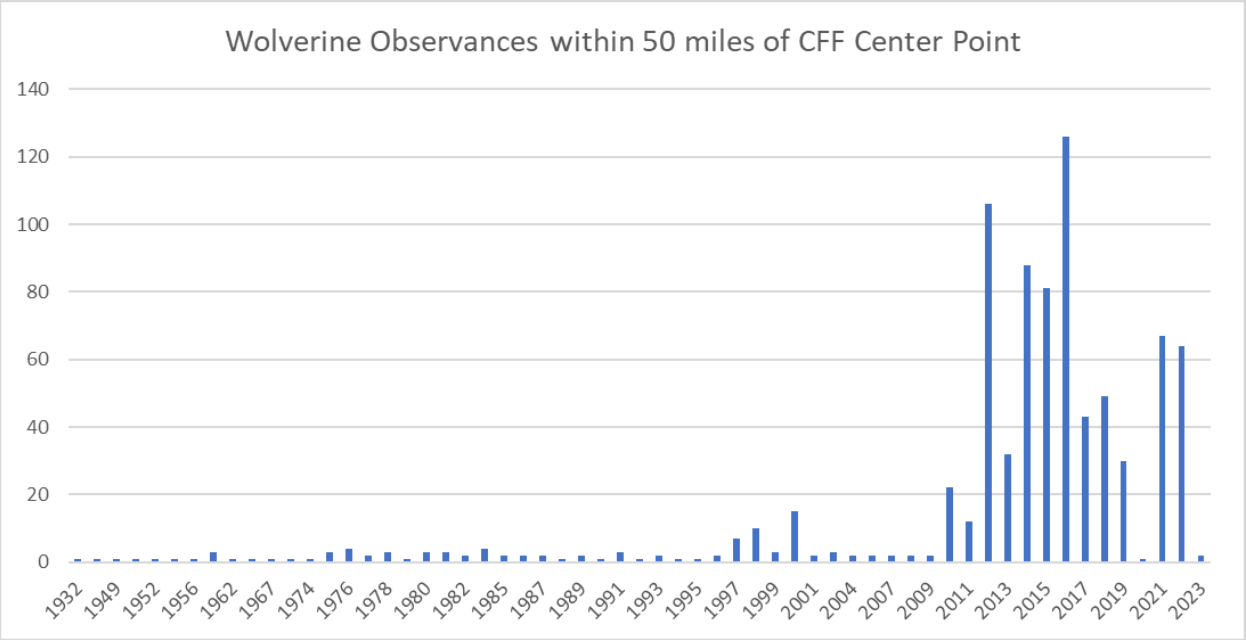


Figure 1: Wolverine Observations from 1932 - 2023.

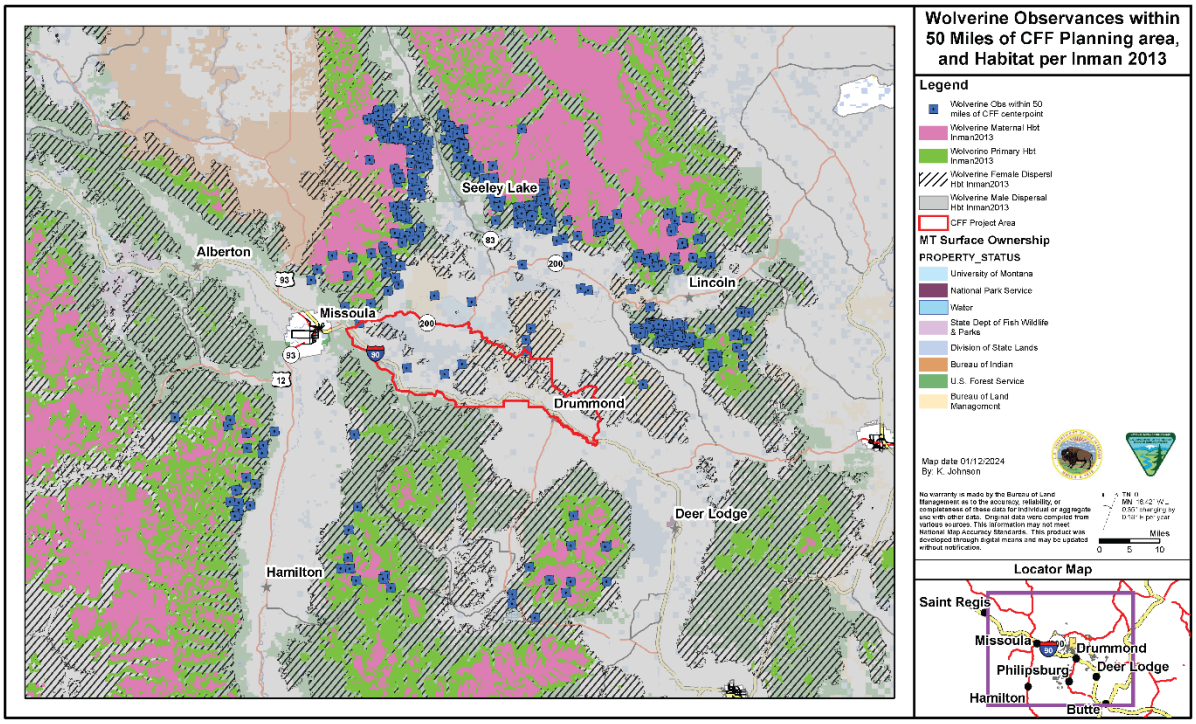


Figure 32: Wolverine Observances w/in 50 miles of CFF planning area.

Effects Analysis

Under the proposed action and sub-alternative, project activities will take place over a 5 - to 15-year period, including pre-treatment planning visits, post-treatment monitoring and potential tree planting if regeneration did not prove sufficient. In wolverine male and female dispersal habitat, treatments will occur over several weeks within one season in any given treatment block and are expected to affect the development of forest structure during the following decades with the expected desired conditions taking decades in some cases, non-forested grassland habitat initially responding w/i next growing season but will develop its native composition grasses, forbs, and shrubs w/i the next decade. Thinning and prescribed burning will lower the risk of severe stand-replacing fire while aiding the development of multi-story mature forest. Timber management will leave shrub cover and some mature trees, while converting stands to the stand initiation phase, reducing the incidence of insect infestation and risk of stand-replacing fire.

Although, wolverine dispersal habitats are not suitable for the establishment of home ranges and reproduction, they are important for long distance travel between areas of suitable habitat and flow of genetic variability. Wolverine do not generally use dispersal habitats for foraging (USDI Fish and Wildlife Service 2013); however, wolverine are generalists and opportunistic feeders and typically not opposed to using any area that better facilitates movement and dispersal and or provides a food resource. Hornocker and Hash (1981, p. 1298) concluded that food availability was the primary factor determining both movements and home ranges for wolverines studied in northwestern Montana.

Wolverine have been documented within and outside the action area, the predominant number of individuals were in the last 10 years. The current habitat value, connectivity, and use by wolverine are likely influenced by the scattered ownerships and human development along the southern extent of the action area but also w/i most of the valley bottom that surrounds the Garnets between primary habitat at higher elevation (Figure 33, Carroll et.al. 2021). This is further supported by the SSA 2023 noting, "*connectivity among wolverine habitats appears to be particularly sensitive to housing developments and other human impacts in rugged areas located between typical wolverine habitats.*

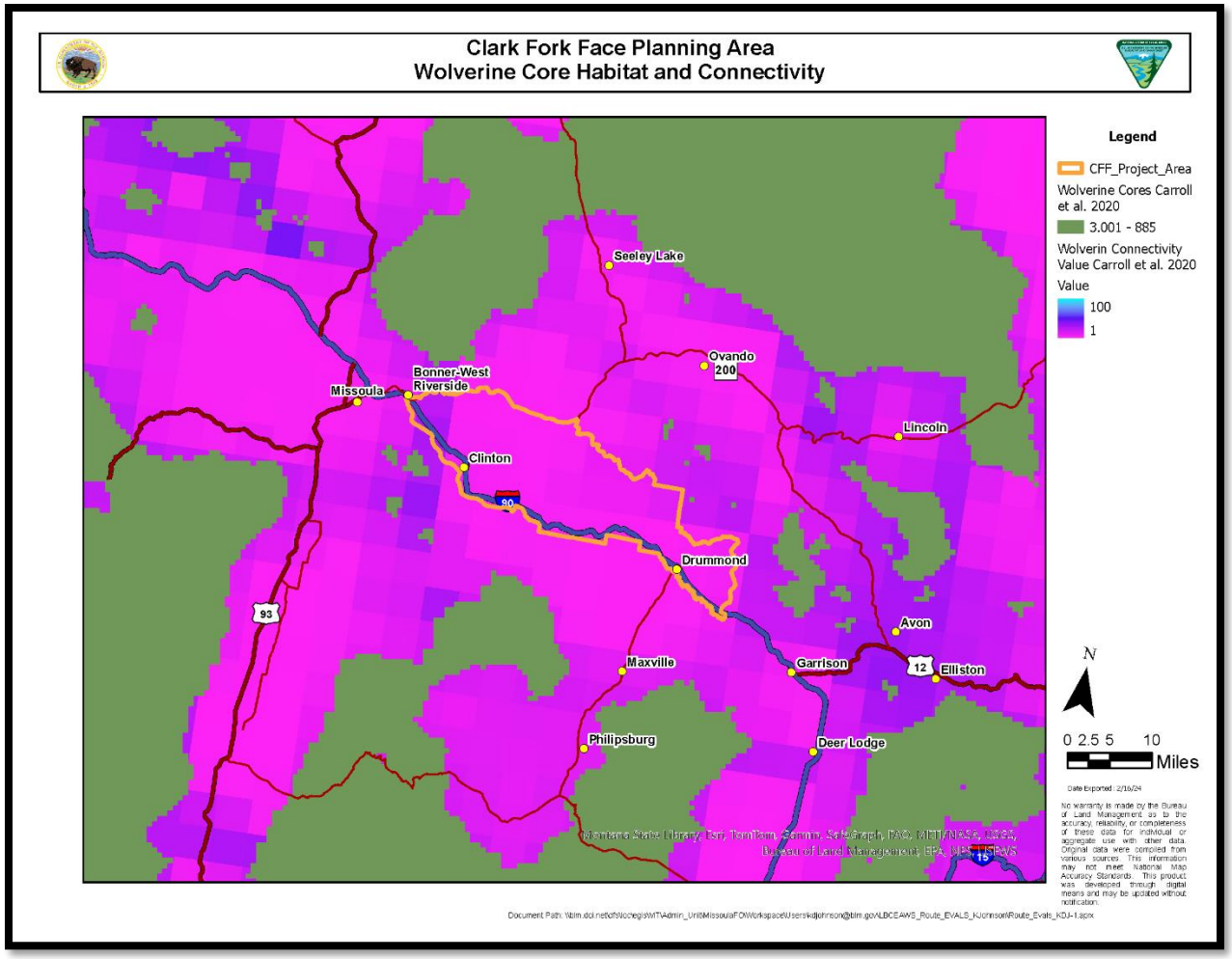


Figure 33: Modeled connectivity w/i and around the CFF Planning Area: (Blue = high connectivity), (Pink = low connectivity).

The Importance of Habitat Management:

In light of the current conditions throughout the project area, habitat management on BLM is important for providing and maintaining suitable dispersal habitat that meets the biological requirements of wolverine in the long-term. Although it is difficult to track dispersing wolverines, especially those making long-distance dispersals outside their natal home range (Vangen et al. 2001), dispersal habitat within BLM treatment areas in its contribution to the entire action area is expected to play an important role in connectivity and long-term persistence of wolverine.

From a broader perspective, restoring dispersal habitat towards the mid-point Natural Range of Variability (NRV) is expected to sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services. Treatments will only occur on approximately 11% of the action area. However, overtime, the project will reduce insect and disease outbreaks, increase residual tree vigor, and reduce the risk of wildfire spreading further into the action area and surrounding communities. As it relates to wolverine, using ecosystem management in the following decades to reach desired conditions is expected to improve forest health and subsequently better facilitate dispersal and connectivity

between core habitats adjacent to the project area.

Temporary and Permanent Road Building, Use and Reclamation:

The analysis previously referenced the difficulty tracking dispersing wolverine. Therefore, the broader analysis of adding more roads in dispersal habitat, i.e., identifying the effects of adding temporary and permanent road is difficult to conclude, especially when wolverine have large home ranges. Wolverine are reclusive and generally have an aversion to roads based on fear of exposure to other predators. Scrafford et al. 2018, p. 541 noted that roads generally reduce the quality of wolverine habitats. Under the proposed action, building and using 4.83 miles of temporary road and 9.4 miles of new permanent roads will occur in dispersal habitat. However, temporary roads will be reclaimed w/I 36 months post treatment. Permanent spur roads will remain post-treatment for long term land management objectives and monitoring. All proposed new roads will be permanently closed to public motorized use. Zero miles of new open motorized routes are proposed.

Wolverine are capable of traveling long distances through atypical habitat and can tolerate some level of road disturbance. However, the effects from new road building, use and subsequent reclamation are likely to result in some level disturbance and subsequent avoidance behavior that is likely to disrupt general movements, feeding activity and or dispersal through the action area when coupled with vegetation treatment, if individuals are present. However, these effects are expected to be insignificant because roads are such a minor component to an already small treatment footprint (11% of the action area), especially when almost 5 miles will be reclaimed. If dispersing through, wolverine are expected to adjust their movements away from the road disturbance.

Long-term Outlook:

Overtime, the proposed action and sub-alternative are expected to restore healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV, promote resilience to wildfire by reducing forest fuel loading and breaking up homogeneous stand conditions, maintain and enhance native and sensitive plant communities and improve ecological health by increasing resistance and resilience to forest insect and disease outbreaks. As it relates to wolverine, benefits will be in the relative short, but more so long-term up to 100 years or more in forested areas. The long-term outcome is expected to improve thermal hiding and feeding cover with mature healthy tree overstories and dense understories that support prey and provide security during dispersal. Through active treatment and restoration activities over the lifetime of the project, post-conditions are expected to maintain and create mature forest conditions, creating stand structures that are relatively complex with variable tree densities, diverse understory composition with abundant snags and downed logs beneficial to wolverine and other wildlife.

In the short-term up to 15 years post-treatment, the quantity and quality of summer habitat for elk, mule deer and moose is expected to improve through increased regeneration and long-term maintenance of understory species such as grasses and forbs and enhancing stands of deciduous woody species, thereby helping to sustain a large animal prey-base for wolverines, especially providing for carrion in the winter. Project sites are also expected to better facilitate travel

through an increased availability of suitable niches across the project area that will be more productive and have an increased composition of native vegetation, a NRV that supports a diversity of refugia for wolverine. In the long-term the proposed action is expected to improve

Although the proposed action and sub-alternative may affect the North American Wolverine, those effects are expected to be insignificant and discountable.

Rationale:

- Wolverine have been documented within the action area.
- Wolverine dispersal habitats are important for long distance travel between areas of suitable habitat and flow of genetic variability.
- Forest treatments will only temporarily affect 11% of male and female wolverine dispersal habitat w/i the Action Area.
- Project activities will take place over a 5- to 15-year period and occur over several weeks within one season in any given treatment block.
- Temporary road building will reduce cover, security and food but will be reclaimed post-project w/I 36 months. Effects will be temporary, and overtime reclaimed areas will again provide dispersal and foraging habitat.
- The effects from roads are likely to result in additional disturbance likely to disrupt general movements, feeding activity and or dispersal through the action area when coupled with vegetation treatment, if individuals are present. However, these effects are expected to be insignificant because (11% of the action area).
- If dispersing through the area and disturbed, the effect is expected to be insignificant because wolverine are expected to adjust their movements away from disturbance.
- The proposed action will not create a barrier for dispersing wolverine but will create another disturbance to navigate.
- The proposed action will have an insignificant effect on connectivity.
- More suitable habitat and food resources are available within the action area found in the GSRMA, especially the Wales Creek WSA and surrounding higher elevations.
- Overtime, the proposed action is expected to restore healthy ecological conditions.
- In the long-term the proposed action will improve the quantity and quality of dispersal habitat and better facilitate connectivity.

Cumulative Effects

The grizzly bear, lynx, and wolverine analysis areas can be expected to experience increasing human activity, recreation and habitation in the next 3 decades. These increases may cause grizzlies to avoid areas of human disturbance, but also increase the risk of human/grizzly bear conflict. Avoidance of otherwise quality habitats and increased potential for conflict could reduce the value of grizzly bear habitat in the planning area. This could diminish fitness of grizzly bears that otherwise could occupy this area over the next 3 decades. Secure habitat is already minimal in the planning area due to high road density, levels of human activity and number of structures. The proposed action is expected to impact around 1% of the grizzly bear analysis area (the planning area) in each season and is likely to benefit grizzly bear habitats by promoting preferred foraging and diminished risk of high-severity fire impacts. The proposed action is unlikely to substantially exacerbate this diminishment of habitat quality from increasing human presence.

Likewise, increased human habitation, activity and recreation may negatively impact lynx by diminishing interior, secure habitat, presenting opportunities for conflicts with humans and pets, and by causing lynx to avoid areas or travel further to obtain needed resources. Avoidance of otherwise quality habitats due to human activities can reduce the value of habitats in the lynx analysis area and lead to increased energy expenditure and diminished fitness of lynx that might occupy this area over the next 3 decades. The proposed action would not appreciably exacerbate these effects. Only 0.001% of current lynx habitat in the lynx analysis area would be impacted over the 10–15-year duration of the project, and more lynx habitat would be created long-term.

Increased human use is not expected to affect the landscape heavily enough to significantly alter critical lynx habitat. However, an increasing number of privately held parcels, road development to reach those parcels, and a rising number of structures and residences may continue to cause gradual fragmentation of lynx habitat in the lynx analysis area.

Increasing human presence and activities in the planning area may cause wolverine to avoid areas of human disturbance and may increase the risk of human conflict. Interstate highway US-90 runs through the planning area and may already present a barrier to wolverine metapopulation connectivity and female dispersal. These stressors combined with predicted decreases in snowpack needed for denning could negatively impact the wolverine metapopulation in a broader area over the coming decades, but denning habitat does not exist in the planning area. The proposed action is not expected to change levels of recreational use or create further barriers to dispersal. Wolverine foraging and denning would not likely be affected by this project, long-term beneficial effects are expected. Project activities are unlikely to cumulatively increase existing disturbance in male and female wolverine dispersal habitat because they would use a variety of habitats.

Other timber and fuels treatments may occur within the species' analysis areas within the next 3 decades and are expected to disturb and temporarily displace grizzlies and lynx, wolverine to a lesser extent. In the short-term, such projects could exacerbate the disturbance and displacement effects of this project in the immediate area where the treatments are expected to occur within a given season. However, timber and fuels treatments other than the BLM proposed action are expected to improve habitat for grizzly, lynx and wolverine within 5-10 years following

treatment as understory vegetation establishes. Such treatments in addition to the proposed action are expected to decrease the risk of severe, stand-replacing fire and positively affect habitats within and surrounding the treatments, conserving and or increasing habitat and prey source abundance and diversity.

Timber management and prescribed burning on lands in the lynx analysis area may have negative effects on lynx critical habitat if multi-story forest structure and horizontal cover is removed. These projects may diminish suitable lynx habitat for a period of years depending on the amount and type of understory that's removed. However, mature understory and horizontal cover is expected to initially reestablish within 5-10 years post-treatment, and snowshoe hare populations can be expected to increase when stands reach the advanced regeneration phase. Such projects on federal land are limited by existing lynx habitat protections.

Depending on implementation other timber harvest, thinning or prescribed burning in the species' analysis areas, grizzlies, lynx and wolverine is expected to benefit in the long-term by opening canopies to allow shrub community development, restoring heterogeneous forest structures, restoring the Natural Range of Variation, decreasing the risk of high-severity fire, and creating a mosaic of habitats across the landscape.

Effects of small-scale mining or exploration have been minimal and are not expected to change in the foreseeable future. Climate fluctuations may affect grizzly bears, lynx and wolverine such as through reduction in snowpack levels causing shifts in denning habitats or season, shifts in the abundance and distribution of some natural food sources causing habitat use changes or range shifts, and changes in fire regimes especially associated with summer drought.

Light to moderate cattle grazing on public and private land is not expected to change substantially in the foreseeable future and is not thought to substantially impact lynx and wolverine, in part because cattle do not tend to frequent mature boreal forest and other habitat patches favored by these species. Grazing could impact grizzlies if bear depredated on cattle and were reactively exterminated. However, this has not occurred in recent years in the area.

Overall, the cumulative effects of the proposed action could exacerbate short-term disturbance or displacement to limited grizzly, lynx or wolverine individuals in particular circumstances. However, populations and critical habitat resources would be maintained. In the long-term this project could be expected to improve habitat quality and resiliency for the 3 species.

Resource Issue 4

Issue 4- How would the Alternatives affect BLM Special Status terrestrial wildlife species and their habitat?

Affected Environment.

Relevant indicators for BLM SSS would include:

- Acres of habitat, moving toward, or maintaining mid-range natural range of variability (NRV).
- Ability to conserve or improve habitat within riparian habitat conservation areas.

- Birds and mammals use forest habitat in various stages of succession for nesting, denning, foraging, and migration.
- Any fine filtered habitat components (standing dead and down wood, large live trees, species diversity, cover areas, security habitat, etc.)?

This section contains a summary of habitat requirements, potential effects, and conservation measures used to evaluate terrestrial wildlife Special Status Species (SSS) (BLM sensitive species are considered SSS).

Table 16: Special Status Species Occurrence and Habitat Potentially Affected by the Proposed Action.

Species	Status	Observations within planning area (MNHP2022b, Swan Valley Connections survey data)
Mammals		
Fisher *(Pekania pennanti)*	Sensitive	No observations in Planning area. Swan Valley Connections carnivore monitoring surveys from 2012-2022 in areas north of the planning area detected no fishers. Suitable habitat in planning area.
Fringed Myotis *(Myotis thysanodes)*	Sensitive	Several observations in 1 site on BLM in using bat call detectors. One observation site 6 miles east of planning area.
Gray Wolf *(Canis lupus)*	Sensitive	Several observations in planning Area (2002-2022). No observations on BLM. Union, Elevation, and Potomac packs adjacent to planning area.
Hoary Bat (Lasiurus cinereus)	Sensitive	Migratory species confirmed occupancy within the planning area. Several observations on 3 BLM sites using bat call detectors.
Townsend's Big-eared Bat *(Corynorhinus townsendii)*	Sensitive	Resident species. 4 observations on 1 BLM site using bat call detectors, 1997.
Birds		

Bald Eagle (*Haliaeetus leucocephalus*)	Sensitive	Residency and nesting throughout the planning area. Nest sites, nesting and foraging habitat documented on BLM along Clark Fork River.
Black-backed Woodpecker *(Picoides arcticus)*	Sensitive	Residency and nesting throughout the planning area. No nest sites documented on BLM.
Flammulated Owl *(Psioscops flammeolus)*	Sensitive	Migratory, 3 observations documented in planning area (2 on BLM). Indirect evidence of breeding.
Golden Eagle (*Aquila chrysaetos*)	Sensitive	Migration, residency, and nesting in the planning area. No known nesting sites on BLM.
Lewis's Woodpecker*(Melanerpes lewis)*	Sensitive	Migratory and nesting in planning area. 2 nest sites documented on BLM along Clark Fork River

The Missoula RMP (2021) contains more in-depth descriptions of habitat requirements and population trends for Bureau sensitive species and focal species, which is incorporated by reference here.

Fisher

Fisher do not appear to regularly inhabit the planning area, but fisher habitat does exist within the planning area. Fishers are non-migratory but may make extensive movements up to a maximum of 40 kilometers in 3 days (Hash and Hornocker 1979) Fisher habitat comprises of upland and lowland forests, including mature conifer, mixed conifer/deciduous forests characterized by dense canopies and abundant large trees snags and logs. The fisher may use hardwood stands in summer but prefer coniferous or mixed forests in winter, they avoid open areas. The habitat is often associated with moist forests and riparian areas, with dens in tree hollows and large snags. A dense understory of young conifers, shrubs, and herbaceous cover is important in summer (MTNHP 2023). Forest structure, which affects prey abundance and vulnerability and provides denning and resting sites for Fishers, is probably more important than tree species composition (Buskirk and Powell 1994). Forest structure can be characterized by a diversity of tree shapes and sizes, understory vegetation, snags and fallen limbs and trees, and tree limbs close to the ground (Buskirk and Powell 1994). Large snags (greater than 20 inches diameter at breast height) are important as maternal den sites (Thomas 1993). Fisher habitat exists within Habitat Type Groups 1, 2, 3, and 4.

Fringed Myotis, Hoary Bat, Townsend's Big-eared Bat

These species rely on a variety of habitats from low- to mid-elevation grass, woodland, and desert shrubland regions, up to and including spruce-fir forests. For Fringed Myotis, foraging occurs along open canopies and riparian areas. Roosts are in caves, mines, cliff faces, rock crevices, old buildings, bridges, snags, and other sheltered sites (Rabe et al. 1998, Cryan et al. 2001, Foresman 2012, Weller and Zabel 2001, Lacki and Baker 2007, Hayes 2011). The Fringed Myotis has been observed in Montana during April through October (MTNHP 2023). While this may be indicative of migration out of the state for winter, a few individuals have been found hibernating in caves (MTNHP 2023) For the hoary bat, the foraging occurs over open water sources within conifer/hardwood forested terrain, along riparian corridors. Roosting occurs primarily in trees in forested areas. Most day roosts in deciduous species, 3-5 m above ground. Hoary Bat is migratory and only a summer resident in Montana, with records from early June through September. Normal arrival and departure dates are uncertain (MTNHP 2023). For the Townsend's big-eared bat, foraging occurs in tall brush and forest understory, and over open areas with wetlands and riparian communities. Roosting occurs in caves and mines. Little information on movement is available for this species. Townsend's Big-eared Bat is present year-round in Montana, with summer or winter records from several localities (Hoffmann et al. 1969, Swenson and Shanks 1979, Hendricks 2000, Hendricks et al. 2000, Hendricks and Kampwerth 2001), but movements of individuals between active season roosts and hibernacula have not been reported or studied. Although C. townsendii occurs in a wide variety of habitats, its distribution tends to be geomorphically determined and is strongly correlated with the availability of caves or cave-like roosting habitat (e.g., old mines) (Pierson et al. 1999). The species has been consistently detected in several caves in western and central Montana in both the active and hibernation seasons. While not conclusive, anecdotally this supports the hypothesis that seasonal movement is limited.

Gray Wolf

There are no resident packs documented in the planning area, but wolves from adjacent packs have been documented in the planning area. Gray Wolves establishing new packs in Montana have demonstrated greater tolerance of human presence and disturbance than previously thought characteristic of this species. They have established territories where prey are more abundant at lower elevations than expected, especially in winter (MTFWP 2003).

Gray Wolves exhibit no particular habitat preference except for the presence of native ungulate prey within its territory on a year-round basis (Missoula RMP). Gray Wolves are opportunistic carnivores that predominantly prey on large ungulates. Main prey items in Montana include deer, Elk, and Moose (MTFWP 2003). Bison are also taken where the ranges of the two species overlap in and around Yellowstone National Park. Domestic livestock such as cattle and sheep are also preyed upon. Gray Wolves may also eat alternative prey, such as rodents, vegetation, and carrion. Gray Wolves commonly hunt in packs, but lone animals and pairs can kill prey as large as adult moose (Thurber and Peterson 1993). Forest and shrubland habitats with adequate prey base of big game animals would provide habitat. Gray Wolves are territorial throughout the year. Summer home ranges are smaller than winter ranges. The annual home range may be up to several hundred square kilometers. This species is not migratory but may move seasonally following migrating ungulates within its territory (MTNHP 2023). Gray Wolves also disperse widely (MTNHP 2023).

Bald Eagle

Bald eagles in Montana were down listed from Endangered to Threatened in 1995 and removed from USFWS list of Threatened and Endangered Species in 2007. The Montana Bald Eagle Management Plan and addendum (MBEWG 1994, MBEWG 2010) directs management of this species in the state and bald eagles continue to receive protection from the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA 1918).

There are documented eagle nests and nesting and foraging habitat on BLM along the Clark Fork River. One of these nests occurs in a fuels management treatment unit.

Nesting and perching trees near water with primary prey species (fish and waterfowl) present. Upland sites are also used to feed, especially in the winter. Nesting sites are the most sensitive to disturbance and are generally located within larger forested areas near large lakes and rivers where nests are usually built in the tallest, oldest, large diameter trees. Nests are also commonly found in cottonwoods along rivers.

The Bald Eagle is a resident species in the forested, mountainous areas of the state (MTNHP 2023). Other individuals from more northerly latitudes either winter in Montana or migrate through the state to more southerly locations. Residents generally remain in the vicinity of their breeding areas throughout the year, while some, though remaining in the state, may move to the more temperate weather of lower elevations or to other areas with higher concentrations of food (Montana Bald Eagle Working Group 1994). This is especially true of individuals that nest at higher elevations. This species habitats are similar to the focal species of the Flammulated owl, which prefers Habitat Type Groups 1 and 2 (Missoula RMP). Bald eagles are associated with riparian or lacustrine areas for foraging and nesting (USDI-BOR 1994). They generally nest and roost in large trees or snags with open crowns in areas that are relatively free of disturbance. Nesting territories are defended year-round and are most often located near open water with a prey base of fish and waterfowl. Bald eagles also utilize upland areas to feed on small mammals and carrion, especially during the winter. Nests are typically within one mile of permanent water (Anthony and Isaacs 1989). Perch and roost sites are also important habitat components for bald eagles. Preferred perch sites include live trees and snags that provide good visibility and are near nest sites or foraging areas (Caton 1992). MFWP has been conducting bald eagle nest surveys since the early 1990s.

Black-backed Woodpecker and Lewis's Woodpecker

Black-backed and Lewis's woodpecker prefers burned forest habitat and mature cottonwood habitat for nesting and foraging.

The Black-backed Woodpecker prefers HTG 1, 2, 3, 4, 5, and 6. Habitat for black-backed woodpeckers, identified by post-burned stands, has undergone huge shifts in availability in the last several decades. The habitat of black-backed woodpeckers and other disturbance-dependent species include, but is not limited to, American three-toed woodpecker, Lewis' woodpecker, and secondary cavity dependent species.

Black-backed woodpeckers are associated with boreal and montane coniferous forests that have experienced recent burns. Black-backed woodpeckers are known to use forested habitat. Primary

habitat according to Saab and Dudley (1998) are post-fire areas that have burned within one to six years. The availability of periodic wildfire is essential to survival of the species (Hutto 1995). Within post-burned habitats, black-backed woodpeckers select a diverse mixture of conifer species for feeding and nesting, none of which is by themselves essential to the species. These include ponderosa pine, spruce, western larch, mountain hemlock, Douglas-fir, and lodgepole pine (Dixon and Saab 2000). Black-backed woodpeckers' nest in snags at high densities in burned areas and can colonize small, isolated burns (Hitchcox 1996). Saab and Dudley found black-backed woodpeckers in burns as small as 75 acres. Black-backed woodpeckers in the Northern Rockies have a high degree of relatedness and can colonize (Missoula RMP).

Black-backed Woodpeckers are a resident species in Montana, where their breeding range encompasses their year-round range. Black-backed Woodpeckers have been observed during every month of the year, although this species has been observed infrequently in the winter, which is probably due to the lack of observers during these months. Also, non-breeding season observations are almost always located in the same areas of the state where breeding and potential breeding records have been documented (Montana Bird Distribution Committee 2012). This indicates the species does not normally move outside of its usual breeding range during the winter.

Lewis's Woodpeckers are known to occur in river bottom woods and forest edge habitats (Skarr 1969). Habitat information from other Lewis's Woodpecker sources state that the breeding habitat is open forest and woodland, often logged or burned, including oak and coniferous forest; primarily ponderosa pine (Pinus ponderosa), riparian woodland and orchards, and less commonly in pinyon-juniper Pinus spp.-Juniperus spp.) (American Ornithologists' Union 1983). Lewis's Woodpecker distribution is closely associated with open ponderosa pine forest in western North America and is strongly associated with fire-maintained old-growth ponderosa pine (Diem and Zeveloff 1980, Tobalske 1997, Saab and Dudley 1998). Lewis’s Woodpeckers migrate. After breeding, Lewis's Woodpecker usually begin their southward fall migration in late August or early September (Tobalske 1997). In Montana, most of the migrating Lewis's Woodpecker observations have occurred in August (MTNHP 2023).

Flammulated Owl

If present, Flammulated owl prefers HTG 1 and 2, which represents 70 percent of BLM-managed lands. These habitats provide for many species including, but not limited to, pileated woodpecker, Clark’s nutcracker, mountain bluebirds, bald eagles, and golden eagles, which are described in the AMS, which is incorporated by reference.

Flammulated owls inhabit montane forests, usually open conifer forests containing ponderosa pine and Douglas-fir, with large snags (Hays and Rodrick 2004, Hayward and Verner 1994, Samson 2006b). Flammulated owls show a strong preference for ponderosa pine and Jeffrey pine throughout its range (McCallum 1994b). In Montana, Flammulated owls are associated with mature and old-growth xeric Ponderosa Pine/Douglas-fir stands (Holt and Hillis 1987, Wright et al. 1997) and in landscapes with higher proportions of suitable forest and forest with low to moderate canopy closure (Wright et al. 1997). Information gathered from other studies throughout their range suggest the breeding habitat of Flammulated owls is montane forest; usually open conifer forests containing pine, with some brush or saplings (typical of the

physiognomy of pre-European settlement Ponderosa Pine forests) (MTNHP 2023). Flammulated owls are found in a cooler, semi-arid climate, with a high abundance of nocturnal arthropod prey and some dense foliage for roosting (McCallum 1994a). Most often they are found on ridges and upper slopes (Bull et al. 1990, Groves et al. 1997). Flammulated Owls are apparently a neotropical migrant, at least in the northern part of their range, but migration patterns are poorly understood (Winter 1974, McCallum 1994a)

Golden Eagle

Golden eagles are protected under the BGEPA and the Migratory Bird Treaty Act. They prefer Habitat Type Groups 1 and 2 (Missoula RMP); open and semi-open habitats, such as prairie and sagebrush. Nesting habitat generally occurs on cliffs, or in large trees associated with sagebrush/grassland, but sometimes power poles or on the ground. Nest sites are commonly associated with an unobstructed view of prey. In Montana, Golden Eagles eat primarily jackrabbits, ground squirrels, and carrion. They occasionally prey on deer and Pronghorn (mostly fawns), waterfowl, grouse, weasels, skunks, and other animals (MTNHP 2023). Nesting season typically occurs in late August. Golden Eagles move to higher elevations after leaving the nest (Baglien 1975) There are no known golden eagle nests on BLM lands within the planning area. Permanent resident in Montana, but migratory movements documented (MTNHP 2023). Breeds throughout western North America from the Arctic to central Mexico; some breeding also occurs in northern Ontario and Labrador, and on the Gaspe Peninsula of southeastern Quebec. Northern birds (north of southern British Columbia, Alberta, and Saskatchewan) move south in the non-breeding season. Golden Eagles move from mountains to valleys in the winter (Skaar 1969).

Environmental Effects—No Action Alternative

The No Action Alternative will not implement the Proposed Action or 2b sub-alternative and will result in no acres treated on BLM lands in the planning area. The BLM would not implement any vegetation management in the project area. The Habitat Type Groups that are outside of the Natural Range of Variability (EA section 3.2) would not progress towards the natural range of variability. Decades of fire suppression and past management activities in the planning area that have resulted in current conditions that deviated from the NRV when measured by tree species composition, density and age class distribution will remain. The effects described under the proposed action and 2b sub-alternative to BLM SSS will not occur under the no action alternative. However, without vegetation management to restore ecological health and reduce fire severity, the quantity and quality of suitable habitat for species would be reduced over time, although, for fire dependent species such as the black-backed woodpecker, Lewis's woodpecker and flammulated owl post fire habitat suitability may remain where fire severity was less.

Under the No Action alternative, the forests' ability to maintain old-growth open understory characteristics is expected to reduce over time with notable changes in forest structure and increased stand density and fuel loading; precursors for uncharacteristic wildfires that reduce habitat quality and quantity. Overtime, forests are expected to lose their ability to support the biological requirements of BLM SSS. Not implementing treatments is likely to create conditions that set a precedent for loss of diverse native plant communities, less resistance and resilience to forest insects and disease and increased potential for complete habitat loss, forage and prey

reduction unsuccessful reproduction and possible physical harm or mortality of species because of high severity fire. Environmental Effects – Alternative B and Sub-Alternative.

Treatments associated with Alternative B and Sub-Alternative, collectively the proposed action are expected to disturb BLM SSS where project implementation overlaps with species presence. The level of disturbance will depend on the project type and proximity to activity and subsequent individual response. Displacement may also occur if individuals feel threatened enough to leave the project area; displacement can be temporarily or permanent depending on behavioral response and habitat suitability associated with the biological requirements of individuals. Temporary road building under the sub-alternative will result in 6 miles of habitat loss through the life of the project; however, these roads will be reclaimed post-project and eventually will provide varying levels of habitat suitability for BLM SSS, dependent upon reclamation/regeneration success. Permanent road construction will lead to 16 miles of habitat loss, these will result in permanent displacement of BLM SSS, however, bats, and avian species may use the road openings to move and forage opportunistically. Under the sub-alternative, no road construction will occur and, thus, no impacts to BLM SSS or habitat will occur from roads. All proposed roads—temporary and permanent -- will be permanently closed to public utilizing physical closures including but not limited to gates, boulders, riprap, Kelly-humps/tank-traps, or obligation of a segment of road at tis origin as described in Proposed Action (section 2.2.1).

The effects from the proposed action are predominantly expected to be tempered by spatial and temporal factors that limit the disturbance within any season and area, including that of road use. If disturbance occurs species are expected to move away from the disturbance to nearby habitats which are primarily areas of similar forest type that contains features that would support the biological requirements of multiple species. Disturbance and habitat loss (temporary or permanent) is not expected to cause physical harm individuals because avoidance and minimization measures for retention of special habitat components such as snags, tall brush and forested understories, open water sources along riparian corridors, or other features contributing to species productivity will be incorporated into each project where necessary to conserve BLM SSS. If any nests or bat roosting sites were discovered during road building, the road would be rerouted per design feature. However, there may be incidental disturbances to unknown bat roosting sites and or avian nests but pre-project survey, timing restrictions and project modification where needed is expected to reduce the potential for harm to where it's unlikely to occur. Some generalist and opportunistic individuals may return after the disturbance ceases, seeking or taking advantage of new foraging opportunities stemming from open canopies and new understories growth that's supports an increase in food resources.

Project implementation will occur within limited treatment blocks over a 5–15-year period. The proposed treatment area comprises 7.7% percent of the overall 247,191-acre planning area, and proposed treatments will take place within only a portion of that 19,147-acre area in any one season. Thus, if treatments were spread evenly across 10 years, 1915 acres would be treated each year. Some areas will be visited in a subsequent season for prescribed burning or tree planting causing the project to cover a maximum of 15 years. Post-treatments will have a reduced temporal scale of activity and likely spatial compared to the original treatments. BLM SSS may be present and disturbed again, resulting in a mixed response as described above. However, because the scale of the subsequent burning and planting should be less, the level of disturbance to individuals is expected to be minimal, as compared to the original treatments, unlikely where

individuals have already move to adjacent habitats. For all species considered, although short term effects from project implementation are expected, they are outweighed by the long- term benefits of habitat diversity, fire resiliency, and forest conditions shifting towards their Natural Range of Variability (NRV). These long-term benefits will increase the suitability of habitats associated with BLM SSS better supporting their biological requirements conducive to species viability and long-term persistence over generations.

Fisher

Alternative B or sub-Alternative will increase noise, human presence, motorized traffic, and habitat manipulation. Approximately 1915 acres would be treated annually across the planning area over 10-15 years; surrounding untreated forest, as well as reserve areas (riparian areas, wildlife corridors and retention patches) that are expected to provide secure habitat for fishers to move through/around treatment areas minimizing offsetting effects. Optimal conditions for fishers are forest tracts of 245 acres or more, interconnected with other large areas of suitable habitat (MTNHP 2023), which can be found in adjacent areas of the planning area. Temporary and permanent road building may result in habitat loss, but the affect to fishers will be insignificant because it will be notably offset by reclamation/regeneration and restoring habitat to a NRV within the planning area. In the early stages providing dense understories of young conifers, shrubs, and herbaceous cover which are important features to fishers requiring optimal conditions. Under the sub-alternative, no road construction will occur.

Following treatments, a temporary loss of hiding cover and understory forage, as well as reduction in prey species may occur. Cover and prey effects are expected to be short lived and abated once understory trees and deciduous shrub species re-establish (approximately 1 - 5 years from treatment). Fishers are opportunistic and may return after the disturbance ceases, seeking or taking advantage of new foraging opportunities for small mammals that take advantage of the site regeneration and new food resources. Forest structure which influences prey abundance and species vulnerability will be retained where special habitat components such as snags, tall brush and forested understories, open water sources along riparian corridors are conserved for wildlife under the proposed action. The opening of forest stands, and prescribed burn treatments are likely to increase forage quantity and understory plant species diversity in the long-term (10 – 20 years). This is expected to be beneficial by providing suitable habitat for prey species, thereby increasing food resources for fisher. Snowshoe hares are an important dietary item for fishers in Montana, as is deer carrion (Foresman 2012), therefore, where advanced regeneration improves dense horizontal cover and subsequently snowshoe hare habitat overtime, fishers will benefit. Design features used to maintain and improve snags and large woody debris ae expected to maintain denning habitat for fishers in the long-term. Utilizing site specific Riparian Management Objectives (RMOs) and Riparian Conservation Areas (RCAs) to improve or maintain riparian habitat are also expected to benefit fishers and their habitat. Over the long-term, forest treatments overall that restore complex forest structure will be beneficial to fishers.

Fringed Myotis, Hoary Bat, Townsend's Big-eared Bat

Forest treatments and associated activities may affect both roosting and foraging habitat for bats. Effects may range from temporary displacement to elimination of roost sites, except for Townsend's Big-eared Bat, which roosts in caves and mines. The fringed myotis and hoary bat

coexist over much of their ranges using similar habitat features. Although fringed myotis predominantly roosts in caves, mines, rock crevices, buildings, they also use snags. Hoary bats use managed and unmanaged forests and sometimes urbanized areas with large trees. Being a very solitary species, they will roost and conceal themselves in the foliage of mature deciduous and coniferous trees. For both species, conifer removal and burning operations in active roost sites are expected to disturb individuals, leading to displacement and possible site abandonment, however, this is expected to be incidental and offset by the abundance of adjacent untreated forest and riparian habitat. Prescribed fire will remove understory and subsequently reduce prey-bases and foraging opportunities for the fringed myotis, hoary bat and Townsend's big-eared bat, but it will also promote long-term snag recruitment. Conifer removal will also incidentally remove or alter understories but not to an extent that measurably reduces bat foraging. Conversely, conifer removal will immediately open understories and improve the ability for bats to glean for food. Where prescribed burning is used, and conifer removal opens canopies and exposes forest floors to increased sunlight, moisture and warmth. Herbaceous and shrub cover can be expected to begin regenerating within 1-2 years, subsequently this will improve the quality, quantity and diversity of foraging habitat that better supports bat prey species such as moths, beetles, spiders, wasps, and flies. Edges created along unit boundaries following treatment could also enhance foraging (Taylor et al. 2020).

The minimal annual temporal and spatial scale of the vegetation treatments are expected to minimize disturbance/displacement of these species. Cave, mine and talus roosting, and hibernation habitat used by Townsend's big eared bats and fringed myositis would not be altered because it is not present within the treatment units. Although conifer trees will be removed, deciduous trees also used by hoary bats for day roosts will not be removed during commercial harvest or thinning. Also, if bat roosting sites are discovered during road building, the road will be rerouted per design feature. Avoidance and minimization measures for retention of special habitat components such as snags, tall brush and forested understories, open water sources along riparian corridors, or other features contributing to species productivity will be incorporated into each project where necessary to conserve bats.

Gray Wolf

There are no resident packs documented in the planning area, but wolves from adjacent packs have been documented in the planning area. Gray wolves, if present, are likely to be disturbed from noise and human activities associated with vegetation treatments (mastication, chainsaw thinning, timber harvest, road construction, tree planting and prescribed burning). However, wolves have no habitat preference and large home ranges (150 /mi²) and can travel 10-20 miles per day, so they can easily avoid the relatively small treatment areas and disturbance. Also, the minimal annual temporal and spatial scale of the vegetation treatments is expected to minimize disturbance of wolves to negligible amounts. The long-term effects of the proposed treatments are expected to be beneficial to gray wolves as vegetation treatments improve forage quantity and quality for ungulate prey, increasing prey quantity.

Bald Eagle

In Montana, as elsewhere, the bald eagle is primarily a species of riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season (MTNHP 2023).

Nesting sites are generally located within larger forested areas near large lakes and rivers where nests are usually built in the tallest, oldest, large diameter trees (MTNHP 2023). Nesting site selection is dependent upon maximum local food availability and minimum disturbance from human activity (Montana Bald Eagle Working Group 1994). Within the planning area these sites would be identified as Riparian Habitat Conservation Areas (RCA) and will not be treated under any alternative. Not treating them will preclude the possibility of eagles being disturbed while nesting and or foraging, and or disturbance of habitat along the Clark Fork River. Also, the adherence to the Montana Bald Eagle Management Plan and addendum and design features (See section 11.0.15) for nesting bald eagles is expected to further eliminate potential effects to individuals, and nest sites. Bald eagles are also opportunistic feeders, hunting live prey, scavenging, and even pirating from animals. Long-term benefits from project site regeneration are expected through maintaining and or improving prey bases such as small mammals and birds, and attracting ungulates that may provide a future carrion source.

Black-backed Woodpecker and Lewis's Woodpecker

Black-backed woodpeckers and Lewis's woodpeckers are disturbance-dependent species. The habitat of black-backed woodpeckers in Montana is early successional, burned forest of mixed conifer, lodgepole pine, Douglas-fir, and spruce-fir (Hutto 1995a, 1995b. Lewis's woodpecker distribution is closely associated with open ponderosa pine forest in western North America and is strongly associated with fire-maintained old-growth ponderosa pine (Diem and Zeveloff 1980, Tobalske 1997, Saab and Dudley 1998). Lewis's woodpecker also uses recently logged forested and mature cottonwood habitat. Currently, forest conditions within the planning area are highly susceptible to and experiencing forest insect and disease outbreaks These conditions are conducive to supporting nesting and foraging of both species. In the short-term, thinning treatments and commercial timber harvests targeting forests with insect and disease outbreaks are expected to reduce the immediate foraging and nesting opportunities but also future potential insect outbreaks and foraging habitat. Incidental disturbance may also occur where individuals are present, but effects overall are expected to be minor because design features (see section 11.0.15) to avoid or reduce treatments during nesting periods May until September have been incorporated into project design. Displacement is likely to occur but since the treatment units are only a small percentage of forested habitat affected by insect and disease, woodpeckers can easily displace to adjacent forest habitat that support their biological requirements. Woodpeckers are expected to respond positively to newly prescribed burned forest habitat in units, benefitting from large tree mortality in burned areas that attract and increase the availability of wood-boring insects and increase snag recruitment for nesting overtime. Design features used to maintain and improve snags and large woody debris will also maintain suitable nesting habitat and benefit t woodpeckers in the long-term. Site specific RMOs and RCAs in riparian areas would provide further benefit to Lewis's woodpecker foraging and nesting habitat along the Clark Fork River.

Flammulated Owl

Flammulated owls are habitat specialist that depends on large cavity-bearing snags it is vulnerable to habitat loss and fragmentation. The species shows a strong preference for Ponderosa Pine (Pinus ponderosa) and Jeffrey Pine (P. jeffreyi) throughout its range (McCallum 1994b). Flammulated owls are cavity nesters, usually in old woodpecker sites. In general, individual Flammulated Owls occupy the same breeding territory in successive years (Reynolds

and Linkhart 1987a) with territory sizes about 5.2 square kilometers. Males show strong territorial fidelity, but females may disperse to adjacent territories (dispersal distance averaged 474 meters) (Reynolds and Linkhart 1987a). Most susceptible to disturbance during peak of breeding season in June and July, and disturbance from logging activity can have a detrimental effect (USDA Forest Service 1994) Disturbance may occur where individuals are present nesting, breeding success may be also reduced at the local level. However, this is expected to be incidental if it occurs at all because design features (see section 11.0.15) to avoid or reduce treatments during nesting periods May until September have been incorporated into project design. Displacement is likely to occur if project work overlaps with owl presence but since flammulated owls exhibit high site fidelity they are likely to return when habitat regains suitability the following year. Forest treatments are expected to reduce foraging and roosting habitat in the short term until open understories regenerate to provide more resources. However, the treatment units are only a small percentage of suitable habitat, owls are likely to move away from habitat disturbance and lack of resources to adjacent forest habitat that contains a diversity of prey species. They feed on various insects (e.g., moths, beetles, grasshoppers, crickets, caterpillars) (McCallum 1994a, 1994b). Flammulated Owls mainly hunt at night and eat nocturnal arthropods (McCallum 1994a and 1994b), therefore, project activities will not disrupt active foraging. Post-treatment understories and canopies will be more open and improve the ability for owls to glean for food.

The minimal annual temporal and spatial scale of vegetation treatments implemented and abundance of adjacent untreated forest providing alternate foraging habitat, are expected to minimize effects. Specifically, project design features used to maintain and improve snags and large woody debris are expected to-maintain nesting habitat for flammulated owls in the short and long-term (See section 11.0.16). Vegetation treatments in preferred flammulated owl habitat (HTG 1-2) favor the retention of large, healthy ponderosa pine and larch trees, which is important as the flammulated owls prefer late-succession forests with open canopies (less than 40 percent cover) (Samson 2006a), and avoid dense-young stands of Douglas-fir (Wright et al. 1997). Management and maintenance of old-growth ponderosa pine will be beneficial for flammulated owls. Removal of small diameter trees through prescribed fire, harvest and thinning will maintain large-diameter, open stands with open understories. This is expected to facilitate habitat conditions for increased quality, quantity, and diversity of understory plants, thereby increasing suitable habitat for flammulated owl invertebrate food sources. In the long-term, stands are expected to move towards conditions that would have likely existed had fire played a natural role on the landscape resulting in conditions that supported the biological requirements of flammulated owls.

Golden Eagle

Golden eagles receive protection from the BGEPA and the Migratory Bird Treaty Act. Nest sites are commonly associated with cliffs or large trees in forested areas with an unobstructed view. However, there are no known nests on BLM lands within the planning area. If a golden eagle nest were discovered in a treatment unit, vegetation treatments will discontinue until after nesting season, typically late August; nesting sites will be protected thereafter. Implementing these protections are expected to greatly reduce the potential for effects to nesting golden eagles where they are unlikely to occur. Effects from habitat regeneration of native shrub and grassland habitat is expected to increase the quality and quantity of golden eagle foraging by improving the habitat

suitability of small mammal prey species. Site specific RMOs and RCAs in riparian areas will provide further benefit to eagle nesting and foraging habitat.

Resource Issue 5

Issue 5- How would the Alternatives affect big game species and their habitat, specifically winter range, disturbance/displacement, and forage availability?

Affected Environment

Relevant indicators for big game and forest management include: (1) acres of habitat moving toward or maintaining mid-range of natural range of variability; (2) ability to protect or improve habitat within riparian habitat conservation areas; (3) open road densities in big game winter range (Missoula RMP); (3) cover, forage and calving habitat, and elk security habitat.

The Missoula RMP, which is incorporated by reference, identifies elk as a habitat generalist focal species used to gauge impacts on all big game species. The RMP also categorizes travel corridors, adequate security habitat and forage availability (with a focus on winter range) as important factors in maintaining elk populations.

The existing conditions for the Habitat Type Groups in this project area are outside of the Natural Range of Variability as detailed in this EA above in section 3.2 pages 62-68.

Moose, elk, mule deer, white-tailed deer, mountain lion, and black bear occur in the planning area throughout the year. Big game species populations in Montana are managed by the MTFWP. As described in the Missoula RMP, the BLM supports the MTFWP's big game herd management objectives, which are based on herd units, to manage big game habitat. Boundaries of herd units are designated to encompass the seasonal ranges, habitats, or special life-function areas (such as calving and lambing areas) utilized by a more or less discreet population herd (Missoula RMP). The planning area is located within Elk Management Unit 292. The 2004 MTFWP elk management report identified maintaining current levels of elk habitat and maintaining at least 80% of existing levels of elk habitat security as goals for district 292 (MTFWP 2004). The 2021 MTFWP elk count indicates that population numbers in this district were at the objective level (https://fwp.mt.gov/binaries/content/assets/fwp/conservation/elk/2021-montana-elk-count-completed.pdf).

Adequate security habitat and forage availability are important to maintaining elk populations (Missoula RMP). Herd units dominated by dense forest and lack of natural disturbance and limited summer range forage may impact populations. Important food plants including serviceberry, Rocky Mountain maple, and grasses grow only in forest openings or forests with a more open canopy. Proffitt et al. (2015b) also studied the effects of elk calf survival from predation.

Environmental Effects—No Action Alternative

The No Action Alternative will not implement the Proposed Action or 2b sub-alternative and will result in no acres treated on BLM lands in the planning area. The BLM will not implement

any vegetation management in the project area. The Habitat Type Groups that are outside of the Natural Range of Variability (section 3.2, pages 62-68) would not progress towards the natural range of variability. Decades of fire suppression and past management activities in the planning area that have resulted in current conditions that deviated from the NRV when measured by tree species composition, density and age class distribution will remain. The effects described under the proposed action and 2b sub-alternative to big game will not occur under the no action alternative. However, without vegetation management to restore ecological health and reduce fire severity, the quantity and quality of suitable habitat for species will be reduced over time.

Under the No Action alternative, the forests' ability to maintain old-growth open understory characteristics is expected to reduce over time with notable changes in forest structure and increased stand density and fuel loading; precursors for uncharacteristic wildfires that reduce habitat quality and quantity. Overtime, forests are expected to lose their ability to support the biological requirements big game. Not implementing treatments is likely to create conditions that set a precedent for loss of diverse native plant communities, less resistance and resilience to forest insects and disease and increased potential for complete habitat loss, forage and prey reduction unsuccessful reproduction and possible physical harm or mortality of species because of high severity fire.

Environmental Effects – Alternative B and Sub-Alternative

Of the 19,147 proposed treatment acres, approximately 3,416 acres are considered elk winter range habitat and 15,472 are general habitat. Riparian Conservation Areas (RCAs) (site specific application of Riparian Habitat Conservation Areas) for all lotic and lentic features were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess site specific Riparian Conservation Area (RCA) widths to protect streams and wetlands (as well as big game habitats). These site-specific RCAs and RMOs are listed in section 1.5. Management within RCAs would be closely coordinated with BLM Hydrologist / Soil Scientist to ensure no detriment of RMOs. While riparian management objectives are site specific to each stream, the RMOs listed in section 1.5 were developed as the baseline objectives for the project area; additional RMOs for site specific locations are included in Table 4.

Under the Proposed Action, the proposed treatment acres within big game winter range are summarized in Table 17, below:

Table 17: Proposed Treatment Acres within winter range

Treat Group	Proposed Action (Alt B), Acres Proposed	Sub-Alt. B, Acres Proposed
Fuels Management	1,012	1,012
Limber Pine Enhancement	96	86
Prescribed Fire	1,650	1,632
Thinning	167	167
Timber Harvest with Prescribed Fire	576	576

Total	**3,501**	**3,472**

Under the proposed action, approximately 3,501 acres of elk winter range will be disturbed from treatments over a 5–10-year implementation period. Under sub-alternative B, approximately 3,472 acres would be disturbed from treatments over a 5–10-year implementation period. Timber sale activity in big game winter range will be limited to as short a period as possible. Further, treatments will not occur at one time but would occur over a 5–10-year implementation period thus opportunities for big game movement will occur. Fall burning is expected to reduce winter forage, which generally does not recover until the following spring green-up. Utilizing a mix of spring and fall burning is expected to d minimize effects to forage availability in winter range. Low severity prescribed burning proposed in winter range will not convert forested stands to open stands but will reduce conifer encroachment and increase grass and shrubby forage plants, benefitting elk and other species (Hillis and Applegate 1998). Potential effects to elk and elk general habitat are likely to be in the form of temporary disturbance and displacement due to increased levels of human activity, heavy equipment use, and new road construction during vegetation treatment implementation. However, elk are expected to adjust overtime, relatively acclimating to increased human presence. Additional effects may result from a temporary reduction in cover, forage and calving habitat. However, effects will be tempered by spatial and temporal factors (19,147 acres treated over 5-15 years, or sub alternative 2(b) 14,662 acres) limiting the disturbance footprint in any given season. There is ample cover, forage and calving habitat in adjacent untreated areas for elk to utilize during and after treatment implementation to offset the temporary reduction. Further, application of design features used to maintain reserves and special habitat features (such as riparian areas, wildlife corridors and retention patches) and implementing timing restrictions are expected to further minimize effects (See Appendix F: Design Features for Proposed Action). Temporary displacement will not lead to mortality or long-term negative effects.

There would not be no change to open motorized road densities in either action alternative. Open motorized road densities would be maintained in winter range at 2011 baseline (1.70 mi/mi^2).

Under sub-alternative B, there would be no change to total motorized road densities. Under the proposed action, there would be a change to total motorized road densities, which would propose approximately 6 miles of temporary and 16 miles of permanent roads for administrative use only. All proposed roads—temporary and permanent -- will be permanently closed to public utilizing physical closures including but not limited to gates, boulders, riprap, Kelly-humps/tank-traps, or obligation of a segment of road at tis origin as described in Proposed Action (section 2.2.1). Further, closures would be monitored via contractors, BLM employees and volunteer public who would be directed to immediately document and report any breach observed to the BLM. Upon notification of a failed closure, the BLM would take action to repair, replace or improve the closure within 30 days or as soon as conditions allow (periods of deep snow or saturated roads may delay closure repair or replacement depending on the season of discovery). Temporary spur roads would remain in place for no longer than 3 years from time of construction, after which would be obliterated or made impassable, have drainage restored and have slash and native seed applied (See Appendix E. Figure 22 for an example of temporary spur road obliteration, and Appendix F. Design Features for the Proposed Action Section 11.0.17).

In the long-term, effects from the proposed treatments are expected to be largely beneficial for elk and other big game as vegetation moves towards the NRV. Treatments will remove some cover for several years post-treatment (dependent on treatment type and original cover type), but herbaceous and low shrub cover is expected to begin regenerating within 2-5 years. The opening of forest stands is expected to cause an increase in forage plants and improved cover-to-forage ratio. Recent research (Proffitt et al. 2015) suggests that in dense forest, openings for summer forage availability may represent an increasingly rare habitat component due to long-term fire suppression or secondarily, a decline in regeneration logging. Vegetation treatments that emulate natural disturbances to create a mosaic of forest conditions can be beneficial to elk by providing abundant food resources near cover. Restoration of the NRV and reduction in risk of stand-replacing, high severity fire can also benefit elk and other big game by supporting habitat resiliency and maintaining suitable, diverse habitats. In the long term, treatments will ensure habitat connectivity, permeability and resilience are restored, maintained, improved, and/or conserved within the planning area overtime.

Resource Issue 6

How would the Proposed Action impact migratory birds and their habitat?

3.0.2 Affected Environment

Relevant indicators for migratory birds include:

- acres of habitat moving toward, or maintaining mid-range of natural range of variability
- ability to protect or improve habitat within riparian habitat conservation areas.
- nesting season
- forage habitat.

At least 40 migratory bird species are assumed to inhabit the planning area during the nesting season (MNHP 2022b). These species include Cassin's finch, Clark's nutcracker, red-breasted nuthatch, evening grosbeak, northern goshawk, pileated, American three-toed, hairy, and downy woodpeckers, American kestrel, American robin, brown-headed cowbird, chipping sparrow, mountain bluebird, Lincoln's sparrow, song sparrow, Swainson's thrush, mountain chickadee, Hammond's and olive-sided flycatchers, pine siskin, Stellar's jay, and Canada jay.

Environmental Effects—No Action Alternative

The No Action Alternative will not implement the Proposed Action or 2b sub-alternative and will result in no acres treated on BLM lands in the planning area. The BLM will not implement any vegetation management in the project area. The Habitat Type Groups that are outside of the Natural Range of Variability (section 3.2, pages 62-68) would not progress towards the natural range of variability. Decades of fire suppression and past management activities in the planning area that have resulted in current conditions that deviated from the NRV when measured by tree species composition, density and age class distribution will remain. The effects described under the proposed action and 2b sub-alternative to migratory birds will not occur under the no action alternative. However, without vegetation management to restore ecological health and reduce fire severity, the quantity and quality of suitable habitat for species will be reduced over time.

Under the No Action alternative, the forests' ability to maintain old-growth open understory characteristics is expected to reduce over time with notable changes in forest structure and increased stand density and fuel loading; precursors for uncharacteristic wildfires that reduce habitat quality and quantity. Overtime, forests are expected to lose their ability to support the biological requirements of migratory birds. Not implementing treatments is likely to create conditions that set a precedent for loss of diverse native plant communities, less resistance and resilience to forest insects and disease and increased potential for complete habitat loss, forage and prey reduction unsuccessful reproduction and possible physical harm or mortality of species because of high severity fire.

Environmental Effects – Alternative B and Sub-Alternative

Migratory birds are a large and diverse group of species; therefore, it is difficult to make precise predictions about possible effects, however, conservatively, the effects analysis can conclude how vegetation management through commercial timber harvest, prescribed fire, thinning, mastication, and fuels reduction may affect individual birds, reproduction and foraging.

The proposed actions are expected to have effects on the relative abundance and habitat availability of migratory birds through treatments. Forest treatments will reduce habitat elements and biological requirements essential to migratory birds including small to large live trees with dense foliage and dead or dying trees infested with insects or infected with disease, also dense understories, and prey-base resources such as insects and small vertebrates associated with this habitat. Canopy closure will be reduced where timber harvest, prescribed fire and thinning reduce tree density, but this will reduce competition between native vegetation, increasing the availability of resources to native grasses and shrubs and early successional trees and greatly reduce fire severity and the potential for stand replacement. The existing bird assemblage and population are expected to adjust overtime as the acreage of forest communities shift toward the natural range of variability. Specific effects to migratory birds in treatment areas are similar to those described for special status bird species, with initial treatments, effects can range from simple disturbance, site displacement, reductions in food resources to nest abandonment, reproductive loss, and possible physical harm. Effects from vegetation treatments are likely to displacement of birds into adjacent untreated areas where the habitat can meet the biological requirements of migratory birds, however, its condition is similar to the treatment areas, suffering from insect and disease and subject to high fire severity. If activities occur within nesting season, nests, eggs, and nestlings will be unable to move into more secure habitat, therefore, nest abandonment and reproductive loss is likely to occur if avoidance and minimization measure are not incorporated into the projects design. However, existing regulations and appropriate design features (Appendix F) in treatment areas will be applied where necessary, greatly minimizing the potential for effects to migratory bird species where if effects occurred, at the scale of the project they are expected to be incidental. Design features developed for other resources including soil conservation, riparian function, water quality, fisheries resources and terrestrial wildlife would also benefit migratory birds and reduce the potential for effects (See Appendix H: Design Features for Proposed Action). These design features include avoidance of treatments in riparian areas and wetlands, critical big game forage areas as well as retention of snags important for cavity nesters and timing restrictions for sensitive species.

Proposed treatments are unlikely to have population-level effects leading towards a downward trend because: 1) The majority of migratory bird species populations in the treatment area are believed to be secure enough that loss of some reproduction in a year is not relevant at the population scale (AMS 2016) 2) The proposed treatment area comprises 7.7% percent of the overall 247,191-acre planning area, and proposed treatments will take place within only a portion (1000-2000 acres) of that 19,147-acre area in any one season 3) most species reproduce relatively quickly enabling them to repopulate a small area easily; and 4) many migratory bird species are known to re-nest after nest failure, however, some may be lost. 5) Improving forest resiliency and species diversity and reducing the risk of stand-replacing, high severity fire will have long-term beneficial effects on migratory birds' populations. In the long-term, treatments will shift forest species composition towards the NRV, improving forest resiliency and species diversity and reducing the risk of stand-replacing, high severity fire. The long-term benefit of habitat diversification and fire resiliency outweigh the short-term negative effects to individual birds.

Cumulative Effects: *BLM Sensitive Species, Big Game and Migratory Birds.*

Throughout the planning area there are a variety of activities or factors such as timber harvest, Rx fire and mechanical treatments, livestock grazing and agriculture, invasive species management or lack of, roads and railroads, climate change and human encroachment and development that have all influenced the habitat types associated with BLM sensitive species, big game, and migratory birds, directly, indirectly, and cumulatively. The effects from these actions are expected to continue their influence on the health and productivity of species habitat and surrounding landscape in the coming decades. Although all these activities have degraded habitat to varying degrees, there has been habitat restoration and improvement in land management practices that have lessened effects by avoiding, minimizing and or mitigating to maintain and improve the quality of habitat. Some private landowners have improved forestry practices, grazing management particularly riparian, travel management, weed control and prescribed fire and fuels management, at times these were collaborative efforts with other landowners and agencies, including federal. However, wildfire intensity, frequency, and size continue to increase as environmental conditions such as disease and insect outbreaks, climate change and the challenges of forest management on all ownerships persist. These will continue to affect the health, productivity, and resilience of wildlife habitat on all ownerships in absence of management. The proposed action will increase human activity and associated disturbance of sensitive species, big game, and migratory birds throughout the lifespan of the project. Coupled with increased recreation and human development wildlife species will learn to avoid certain areas to minimize their disturbance, although some species such as bats and some migratory birds will be minimally affected by human activity. Secure habitat is already minimal in the planning area due to high road density, increased levels of human activity and number of structures, subsequently, this negatively affects the habitat association and distribution of wildlife, especially big game. Further, an increasing number of privately held parcels, road development to reach those parcels, and a rising number of structures and residences may continue to cause gradual fragmentation of habitat in the analysis area.

However, the implementation of the proposed action where its influence is within a larger landscape, i.e., the CFF planning area is expected to mitigate the historic and residual effects of habitat loss, fragmentation and productivity loss, i.e., cumulatively, the suitability of available

habitat is expected to improve overall where the number of healthy habitats within forested ecosystems begin to outnumber the degraded, especially given the efficient and effective nature of the forest management techniques included in the proposed action. The proposed action is unlikely to substantially exacerbate the diminishment of habitat quality from increasing human presence, conversely it will benefit sensitive species, big game, and migratory birds by promoting preferred foraging, reproductive success, movement corridors and security and the diminished risk of high-severity fire effects in the long-term. Although the proposed action is likely to have negative effects on species and associated habitat (see effects analysis), they are expected to be short-lived, incidental, and cumulatively when combined with other similar efforts within the planning area will not result in significant effects across temporal and spatial thresholds. Conversely, the proposed action is expected to maintain or improve health and function in the long-term by implementing forest restoration and fuels reduction treatments on BLM managed lands, cumulatively benefitting sensitive species, big game, and migratory birds.

Other timber and fuels treatments may occur within the species' analysis areas within the next decade (see Appendix H). In the short-term, such projects could exacerbate the disturbance and displacement effects of this project in the immediate area where the treatments are expected to occur within a given season. However, timber and fuels treatments other than the BLM proposed action are expected to improve habitat for sensitive species within 5-10 years, some sooner, following treatment as understory vegetation establishes. Such treatments in addition to the proposed action are expected to decrease the risk of severe, stand-replacing fire and positively affect habitats within and surrounding the treatments, conserving and or increasing habitat and prey source abundance and diversity. Depending on implementation other timber harvest, thinning or prescribed burning in the species' analysis areas, sensitive species, big game, and migratory birds are expected to benefit in the long-term by opening canopies to allow shrub community development, restoring heterogeneous forest structures, restoring the Natural Range of Variation, decreasing the risk of high-severity fire, and creating a mosaic of habitats across the landscape.

Effects of small-scale mining or exploration have been minimal and are not expected to change in the foreseeable future. Climate fluctuations may affect species habitats such as through reduction in snowpack levels causing shifts in denning habitats or season, shifts in the abundance and distribution of some natural food sources causing habitat use changes or range shifts, and changes in fire regimes especially associated with summer drought.

Partnership, collaboration, and adaptive management can facilitate a larger improvement across ownerships. This will assist the BLM to make significant progress towards reducing the risk of wildfire and managing forest habitats in the planning area using an ecosystem management approach. Managing forest ecosystems within their natural range of variability will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). Overall, the cumulative effects of the proposed action could exacerbate short-term disturbance or displacement to individuals in particular circumstances. However, populations and general habitat resources would be maintained. In the long-term this project is expected to improve habitat quality and resiliency for sensitive species, big game, and migratory birds.

4 Consultation and Coordination

Summary of Consultation and Coordination

The issue identification section 1.5 identifies those issues analyzed in detail in Chapter 3. Section 1.6 provides the rationale for issues that were considered but not analyzed further. Issues were identified through the public and agency involvement process described in Section 4.1.1

Table 18: List of Person, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
USFWS	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	See 4.0.1
Montana State Historic Preservation Office	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	BLM would consult with State Historic Preservation Office prior to implementation of project level activities via Class III Cultural Resource Inventories. If cultural resources are located during the inventory mitigation measures would be applied to reduce or eliminate adverse effects.
Confederated Salish & Kootenai Tribes	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	BLM consulted via mail/conference call with the Confederated Salish and Kootenai tribes in April 2021. No issues or concerns were brought forward in those discussions.
The Nature Conservancy	Large adjacent landowner	Discussed and met with TNC staff on many occasions throughout planning process.
MT DNRC	Large adjacent landowner	Discussed and met with DNRC staff throughout planning process

Consultation and Coordination with U.S. Fish and Wildlife Service (USFWS) on Threatened and Endangered Species

The Missoula Field Office submitted a Biological Assessment (BA) to the US Fish and Wildlife Service on April 28, 2022. Supplemental documents as request by the USFWS were submitted on June 6, 2022, August 19, 2022, September 24, 2022, and Oct. 20, 2022. The BA disclosed the Effects of the Proposed Action on grizzly bear, Canada lynx, Canada lynx Designated Critical Habitat, and North American wolverine.

The BLM determined the proposed action would not affect the western yellow-billed cuckoo (threatened) or whitebark pine (threatened) because those species and habitat are not present within the action area. Bull trout (threatened) and bull trout designated critical habitat would not be affected due to factors associated with design features and conservation measures incorporated into the proposed action and distant proximity and local topography of vegetation treatments and haul routes to occupied bull trout habitat and bull trout designated critical habitat.

The Proposed Action, potential effects, Section 7 consultation, and determinations were discussed during a formal consultation process with the USFWS. On November 8, 2022, the FWS concurred with the BLM's determination of *may affect and likely to adversely affect* grizzly bears (*Ursus arctos horribilis*), Canada lynx (*Lynx canadensis*), and lynx designated critical habitat. The BLM also determined that the Project would have *no effect* on western yellow-billed cuckoo (*Coccyzus americanus*), bull trout (*Salvelinus confluentus*), or designated bull trout critical habitat, and is *not likely to jeopardize the continued existence* of North American wolverine (*Gulo gulo luscus*) or whitebark pine (*Pinus albicaulis).* The FWS responded with a Biological Opinion (BO) and Amended Incidental Take Statement (ITS) for the Missoula Field Office 2020 RMP. The BO included conservation recommendations designed to minimize or avoid effects to the extent possible. The conservation recommendations were incorporated into the proposed action as design features. The BA, supplements, and BO as well as the Amended ITS are incorporated by reference into this NEPA analysis, which summarizes the effects to these species and their habitat as described in the BA. The sub alternative 2b proposes the same suite of forest vegetation treatments, in the same planning area but with a reduction in treatment acres and no new road construction. Because the area if affected is the same but the impact is reduced, this consultation is adequate for both the proposed action Alternative 2 and sub alternative 2b.

On November 30, 2023, the USFWS published a final rule to list the North American wolverine as threatened under the Endangered Species Act of 1973, as amended. The BLM then sent a letter on January 2, 2024, informing USFWS of our intent to reinitiate consultation for that species. BLM submitted a Biological Assessment for North American Wolverine for USFWS review and consultation on March 20, 2024, and determined the proposed action of the Clark Fork Face Forest Health and Fuels Reduction *May Affect but is not likely to Adversely Affect* the North American Wolverine. This consultation process concluded with a Letter of Concurrence (LOC) on April 11, 2024.

Summary of Public Participation

On March 15, 2021, the BLM issued a press release announcing two public meetings to share information about the proposed project and solicit feedback from the public during project development. At this same time, the BLM also announced the public meetings on our MT/DK BLM social media sites. Additionally, emails announcing the meetings were sent to local Agencies and NGOs (non-governmental organizations) to spread awareness. Agencies and NGOs emailed included the Montana Department of Natural Resources (MT DNRC), the Natural Resources Conservation Service (NRCS), Missoula County, Powell County, Granite County, The Nature Conservancy (TNC), The Town of Drummond, Valley Fire Dept. (Drummond, MT) Missoula Rural Fire Dept., The Blackfoot Challenge, The Clark Fork

Coalition, and the University of Montana. Flyers announcing the meetings were also posted at the gas stations and convenience stores in Drummond, MT and Clinton, MT.

The first open house was held March 23, 2021, from 4 to 6 p.m. at the Clinton Rural Fire Dept. The second meeting was March 25, 2021, also from 4 to 6 p.m., at the Eastside park in Drummond. Both meetings were held outdoors due to the COVID-19 pandemic.

The meeting on March 23, 2021was attended by 9 individuals, and the meeting on March 25, 2021 was attended by 5 individuals (plus BLM personnel in both cases). A Missoulian article was published on March 24, 2021, which mentioned the Public Meetings and the proposed project (Chaney, 2021).

An informal comment period followed the public meetings, and initial comments were recorded at that time. Following the conclusion of the formal consultation process with the USFWS (Biological Opinion received Nov. 9, 2022) the BLM posted the DRAFT Environmental Assessment to ePlanning on December 5, of 2022. A press release and social media postings announced the open comment period. The initial 2-week comment period was extended to 5 weeks and concluded on Jan. 15, 2023. Substantive comments were considered and incorporated into the EA as appropriate. See Response to Public Comments, Appendix J.

5 List of Appendices

Appendix A—List of Preparers

Appendix B—Acronyms and Abbreviations

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Appendix F—Design Features for the Proposed Action.

Appendix G—Natural Range of Variability Tables by HTG

Appendix H—Reasonably Foreseeable Actions

Appendix I— Responses to Public Comments

6 Appendix A: List of Preparers

Name	Title	Responsible for the Following Section(s) of this EA
Kyle Johnson	Forester	ID Team Leader, Forestry, Forest Products
Ernie McKenzie	Fisheries Biologist	Aquatic Species and Habitat
Maria Craig	Outdoor Recreation Planner	Recreation, Visual Resources, TTM, Special Designations
Anne Orlando PhD., Chris Boone	Wildlife Biologist. MT/DK BLM Wildlife and TES Program Lead	Federally Threatened or Endangered Wildlife and Wildlife Habitat
Michael Albritton	Fire Management Specialist	Fuels Management
Jodi Wetzstein	Supervisory Forester	Forest Vegetation and Silviculture
Claire Romanko	Hydrologist	Soils, Water, Riparian
Chris Rye	Geologist	Minerals, Abandoned Mine Lands
Jody Miller, Kelly Jo Jackson	Archaeologist(s)	Cultural Resources
Ken Cook	Noxious Weed Specialist	Noxious Weeds
Steve Bell	Rangeland Management Specialist	Rangeland Vegetation/Livestock Grazing
Lonna Sandau	Realty Specialist	Land status, roads
Maggie Ward	Planning and Environmental Coordinator	Document Review / NEPA compliance.
Lester Maas	Cartographer	GIS support and analysis
Kathie Marks	Civil Engineer	Roads and transportation
Greta Brom-Palkowski	Biological Technician	Terrestrial Wildlife and Wildlife Habitat
Mark Peterson	Physical Scientist	Climate Change, Greenhouse Gasses
Erin Heiselmann	GIS Specialist	Mapping

7 Appendix B: Acronyms and Abbreviations

BLM	Bureau of Land Management
BA	Biological Assessment
BO	Biological Opinion
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DR	Decision Record
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy Management Act of 1976, as amended
FONSI	Finding of No Significant Impact
GIS	Geographic Information Systems
IDT	Interdisciplinary Team
MBTA	Migratory Bird Treaty Act of 1918
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	National Historic Trails
NPS	National Park Service
NRCS	Natural Resources Conservation Service
RFFA	Reasonably Foreseeable Future Action
RMP	Resource Management Plan
ROD	Record of Decision
ROW	Right-of-way
SHPO	State Historic Preservation Office
T&E	Threatened and Endangered
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WUI	Wildland Urban Interface

8 Appendix C: List of References

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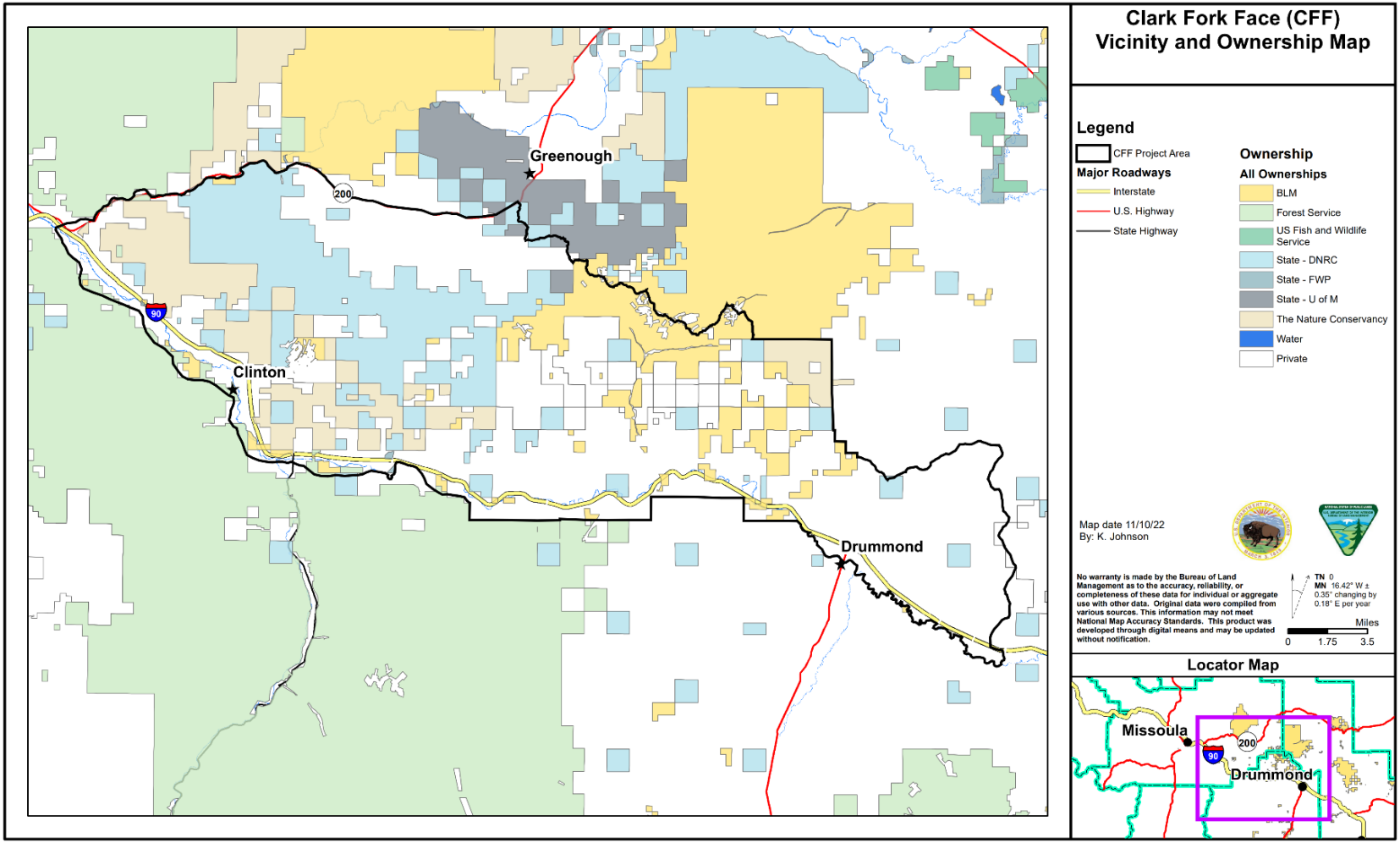
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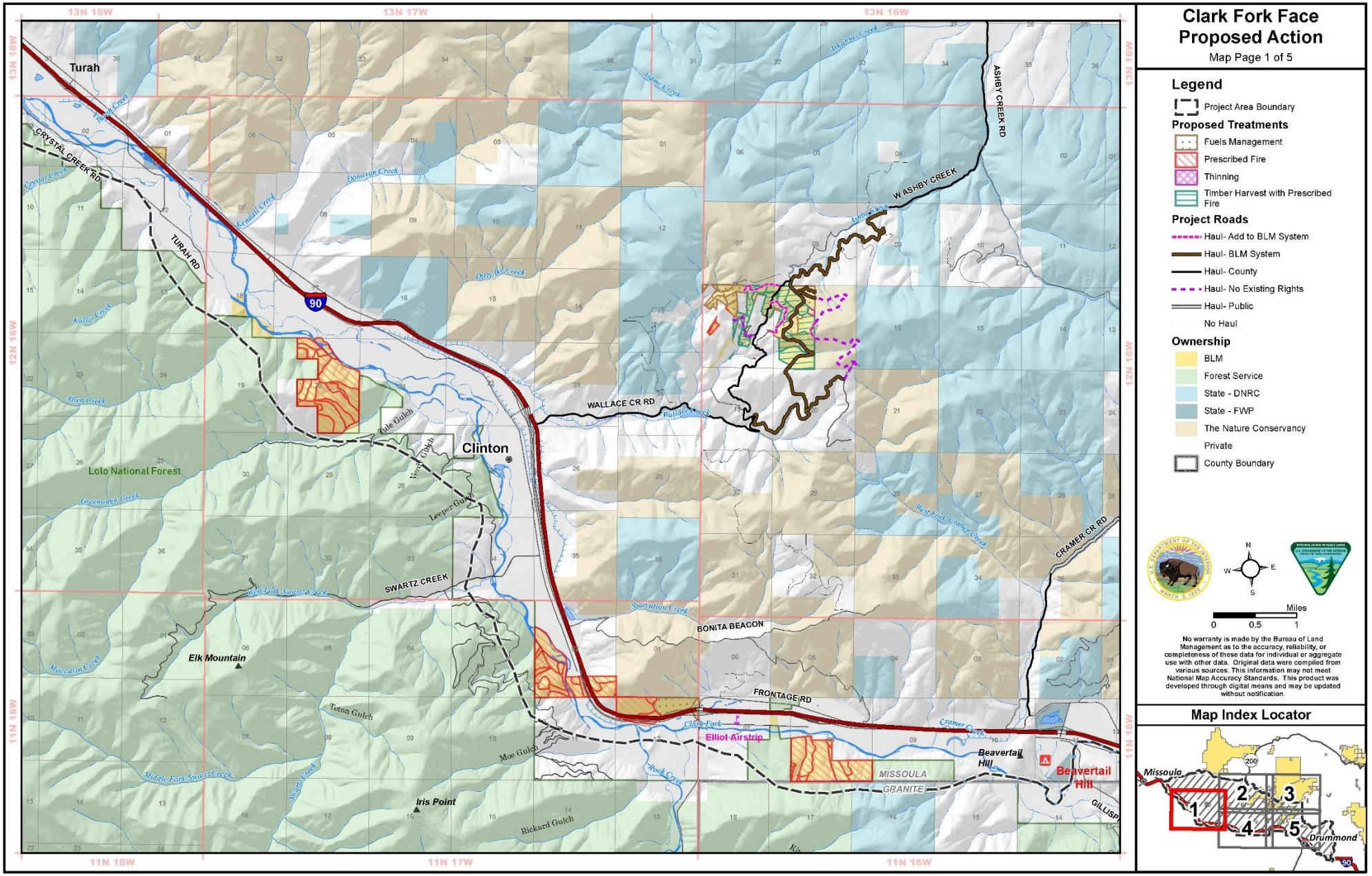
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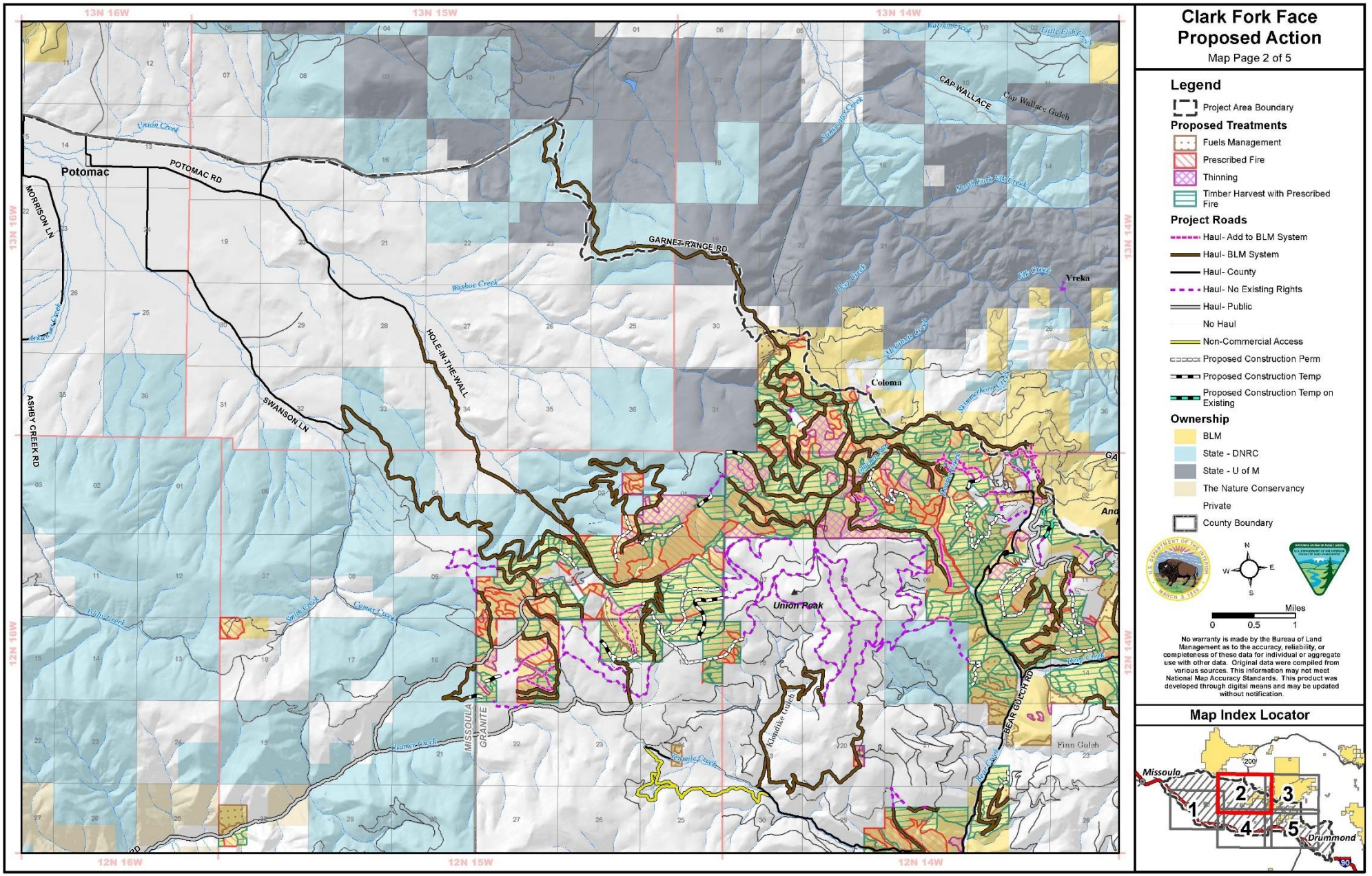
9 Appendix D: Maps

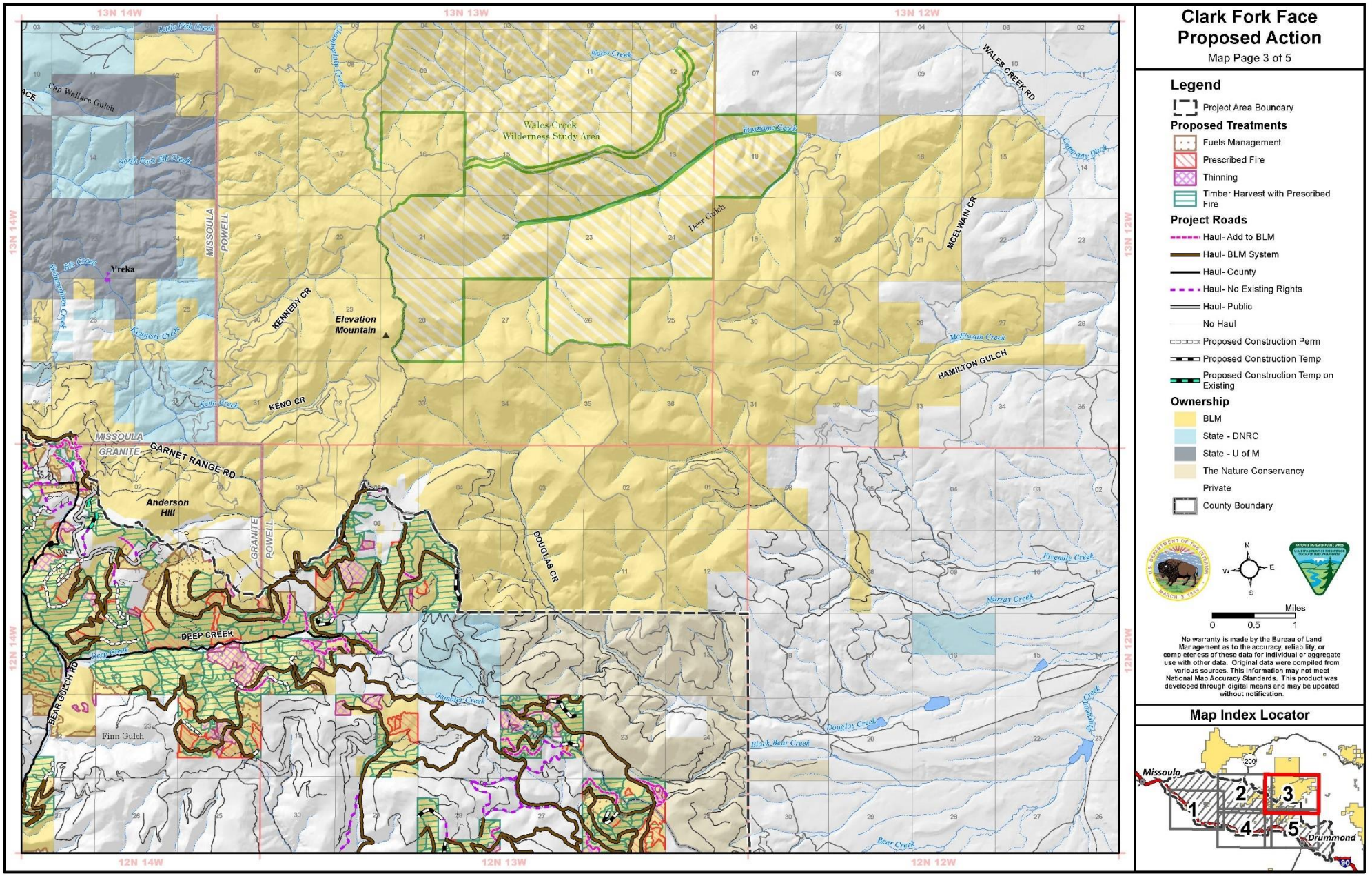
Clark Fork Face Planning Area, Vicinity and Ownership map.

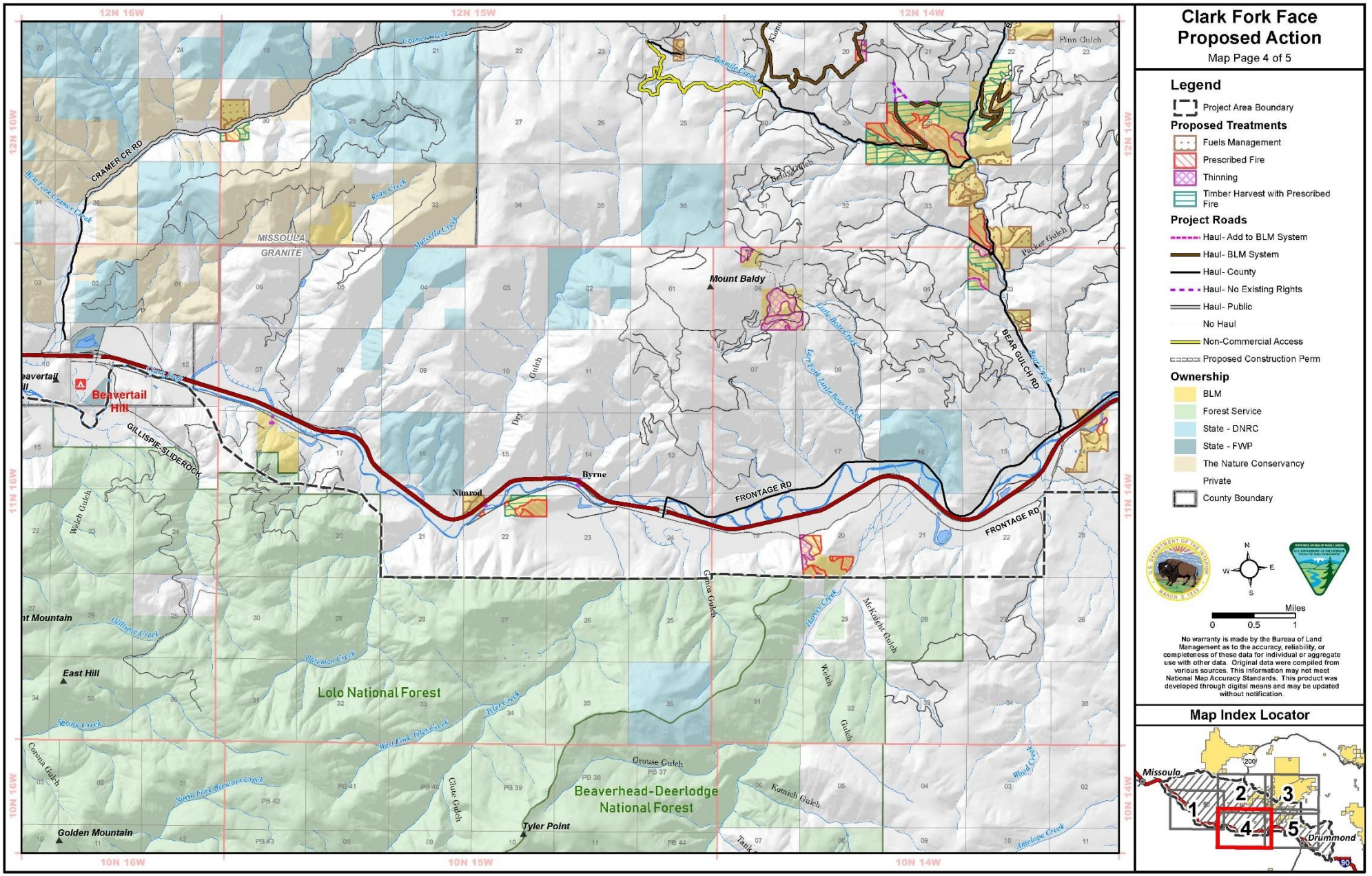


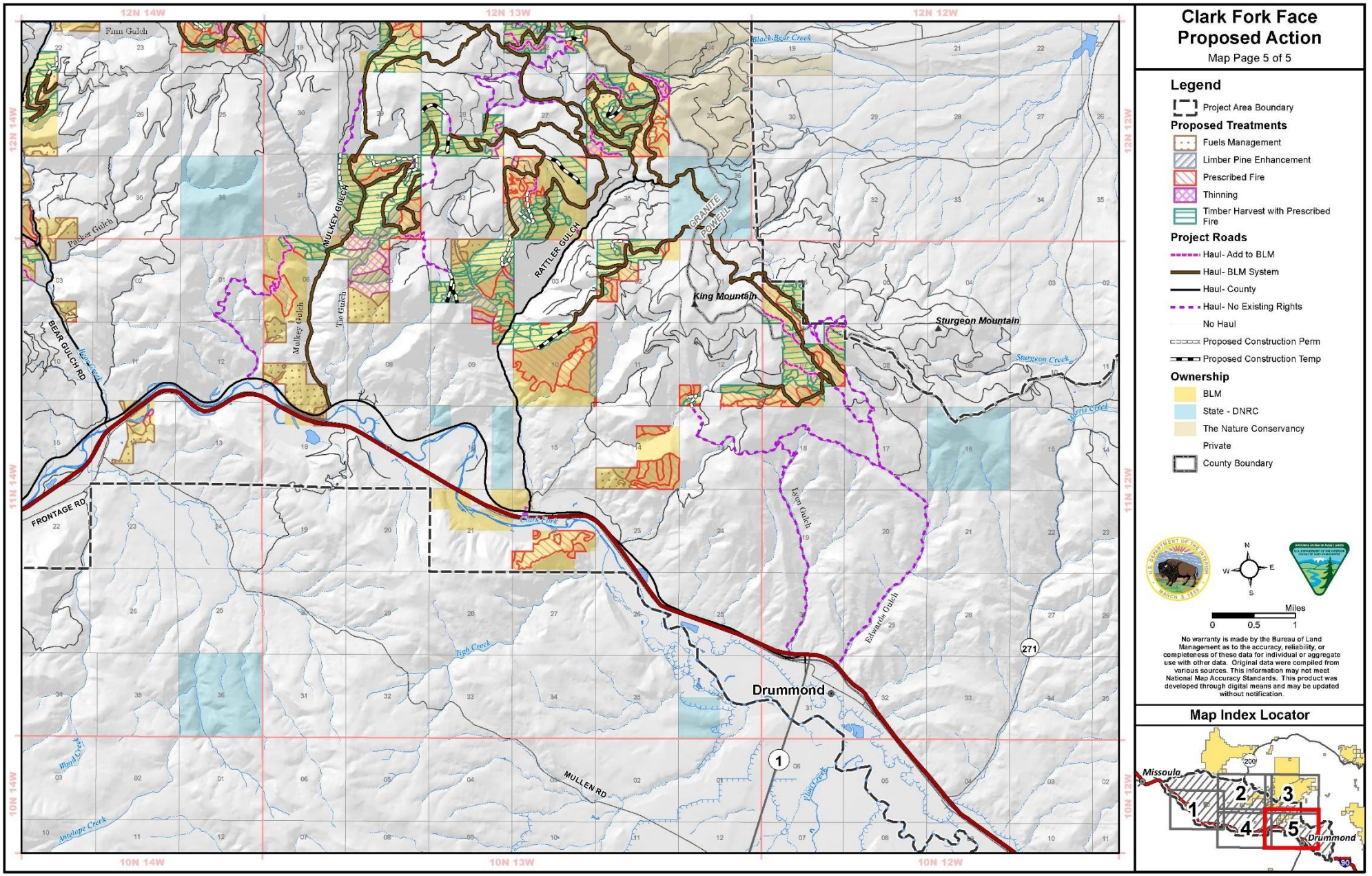
Alternative 2 Proposed Action Maps (5 pages).



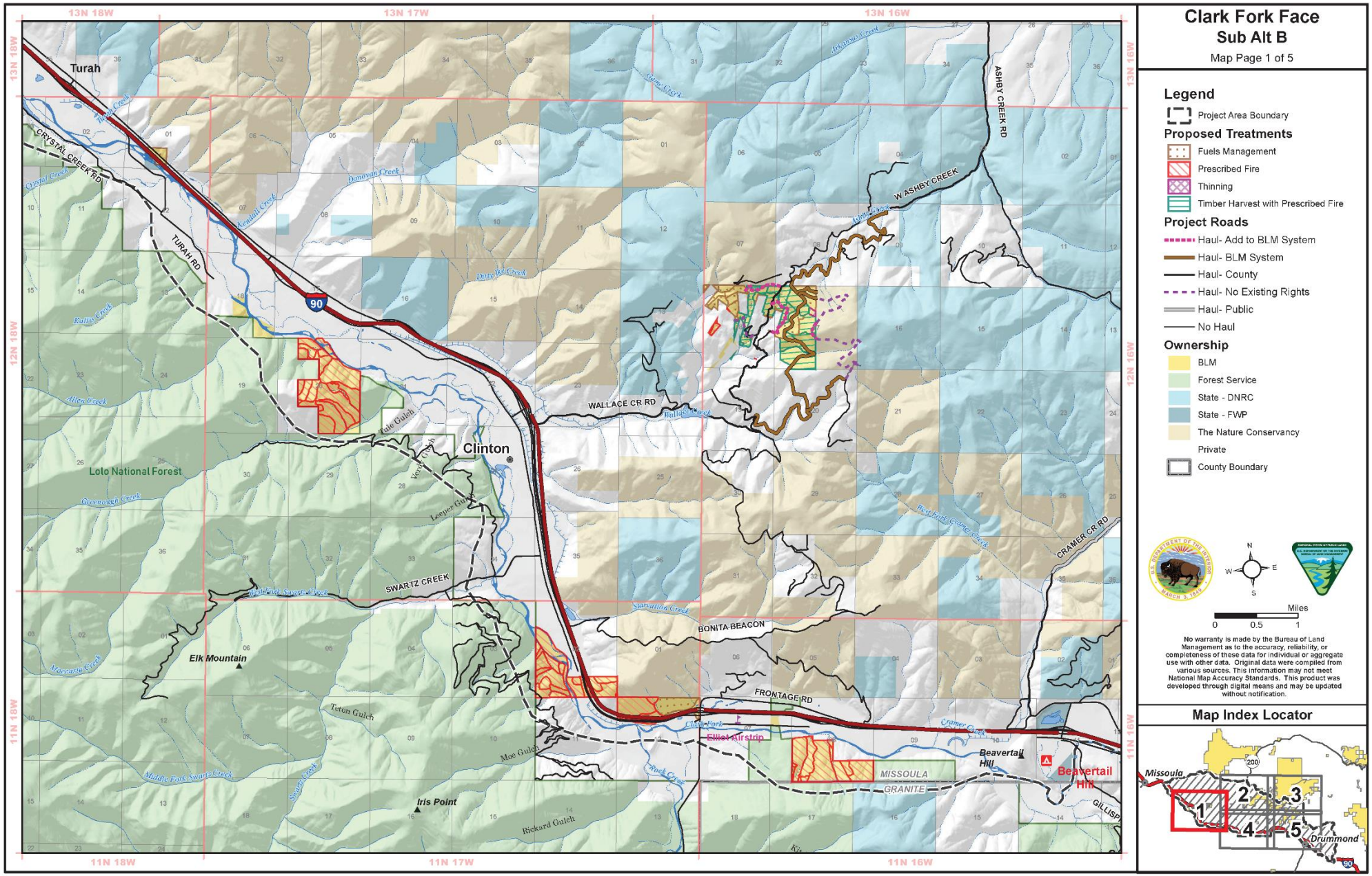

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ASHBY CREEK RD
SWANSON LN
HOLE-IN-THE-WALL
GARNET RANGE RD
CAP WALLACE
Cap Wallace Gulch
Yreka
Coloma
Union Peak
BEAR GULCH RD
MISSOULA
GRANITE
Finn Gulch
Union Creek
Washoe Creek
Ashby Creek
Camas Creek
Bear Creek
Elk Creek
Little Fish Creek
North Fork Elk Creek
Rattlesnake Creek
Rock Creek
Clark Fork River
Clark Fork Face
Proposed Action
Map Page 2 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Perm
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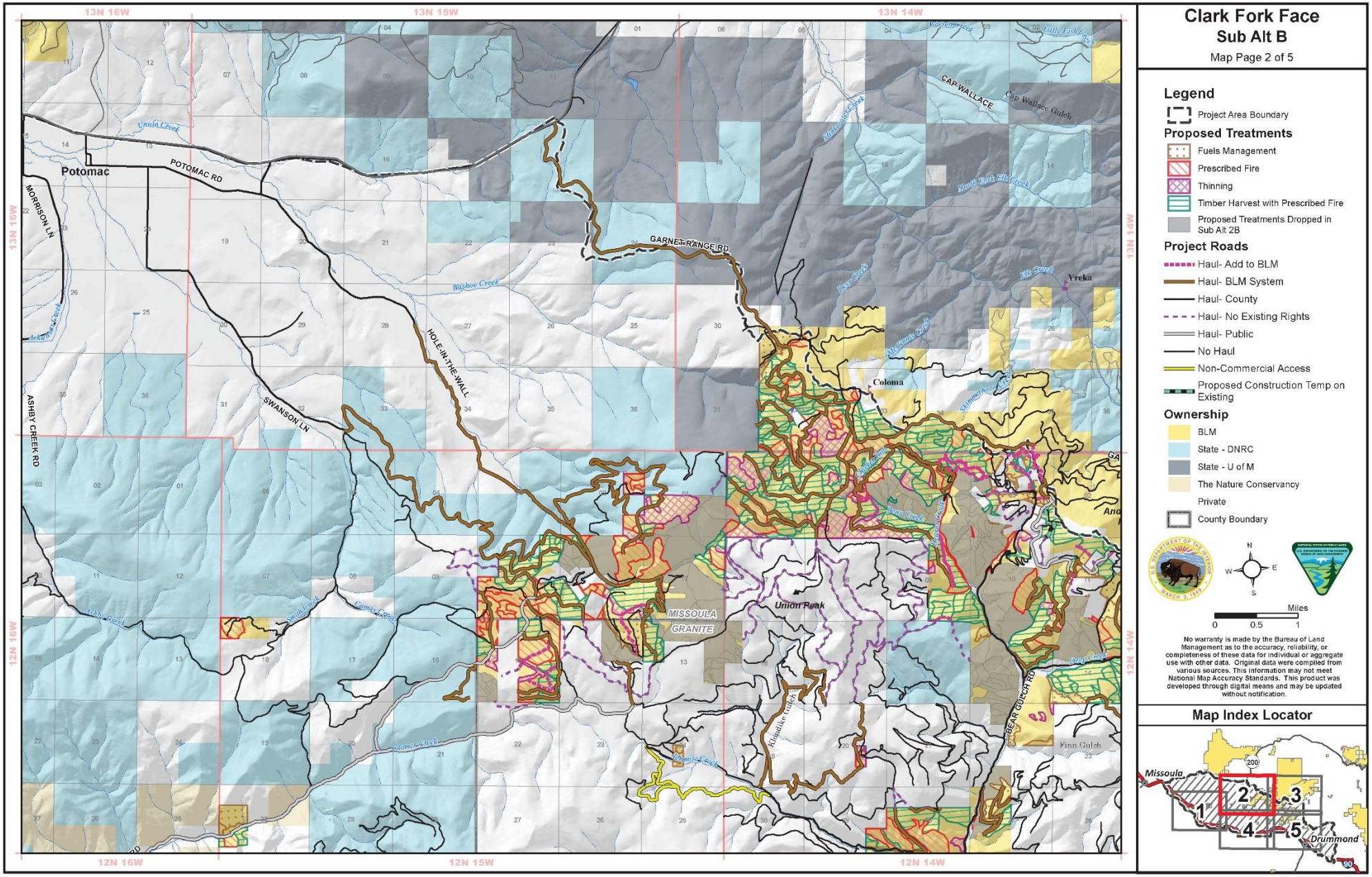

13N 14W
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Wales Creek Wilderness Study Area
Elevation Mountain
Yreka
KENNEDY CR
KENO CR
MISSOULA
POWELL
GRANITE
GARNET RANGE RD
Anderson Hill
DEEP CREEK
BEAR GULCH RD
Finn Gulch
DOUGLAS CR
HAMILTON GULCH
MCELWAIN CR
WALES CREEK RD
Cap Wallace Gulch
Deer Gulch
Fivemile Creek
Murray Creek
Douglas Creek
Black Bear Creek
Bear Creek
Gamlight Creek
Wales Creek
Keno Creek
McElwain Creek
Clark Fork Face
Proposed Action
Map Page 3 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM
Haul- BLM System
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Haul- No Existing Rights
Haul- Public
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Proposed Construction Perm
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Index Locator
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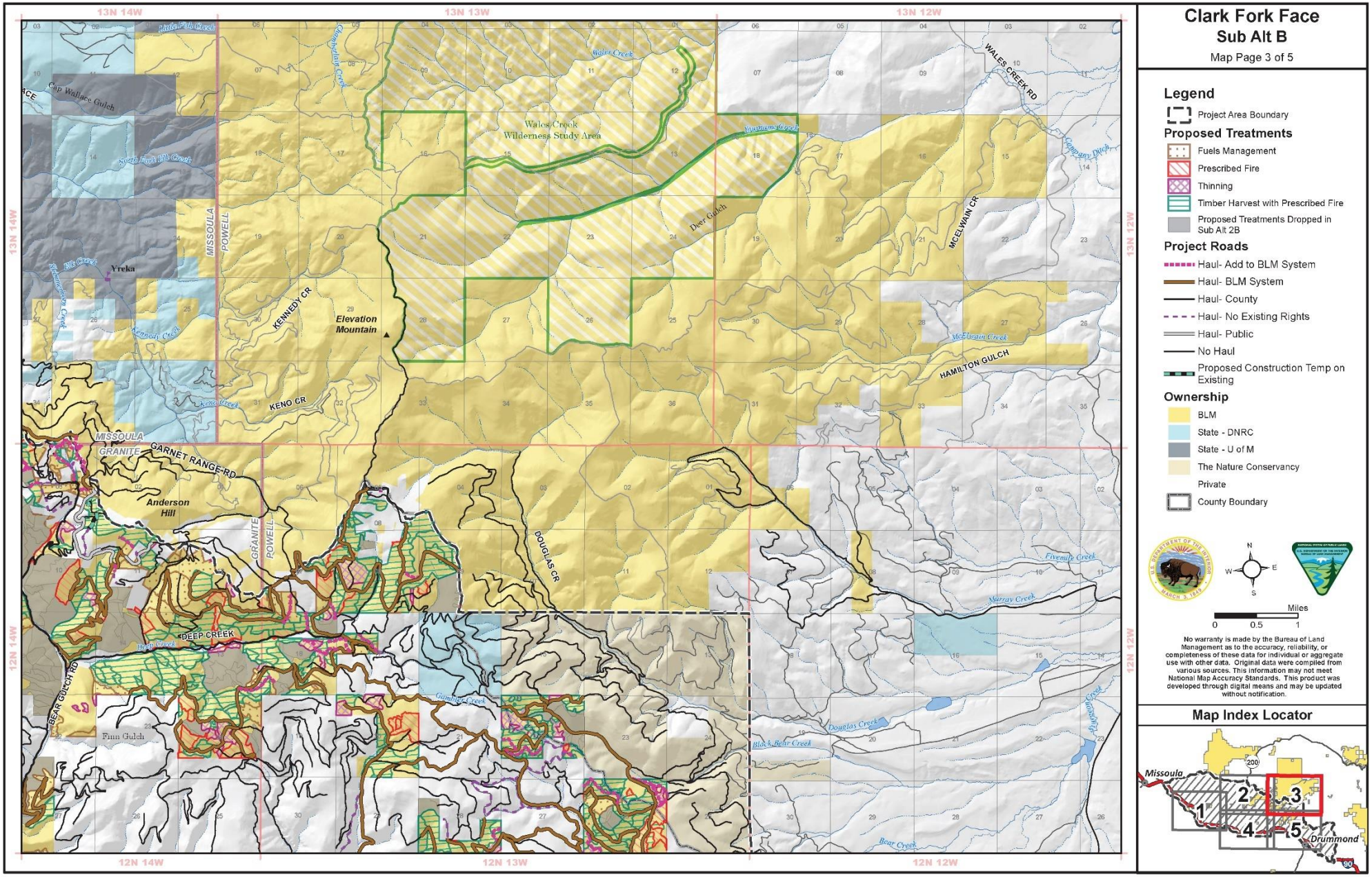

Clark Fork Face
Proposed Action
Map Page 4 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Perm
Ownership
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Miles
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Map Index Locator
Missoula
Drummond
12N 16W
12N 15W
12N 14W
11N 16W
11N 14W
10N 16W
10N 15W
10N 14W
CRAMER CR RD
MISSOULA
GRANITE
Mount Baldy
BEAR GULCH RD
Beavertail Hill
GILLISPIE-SLIDEROCK
FRONTAGE RD
Byrne
Nimrod
Lolo National Forest
Beaverhead-Deerlodge National Forest
East Hill
Golden Mountain
Tyler Point

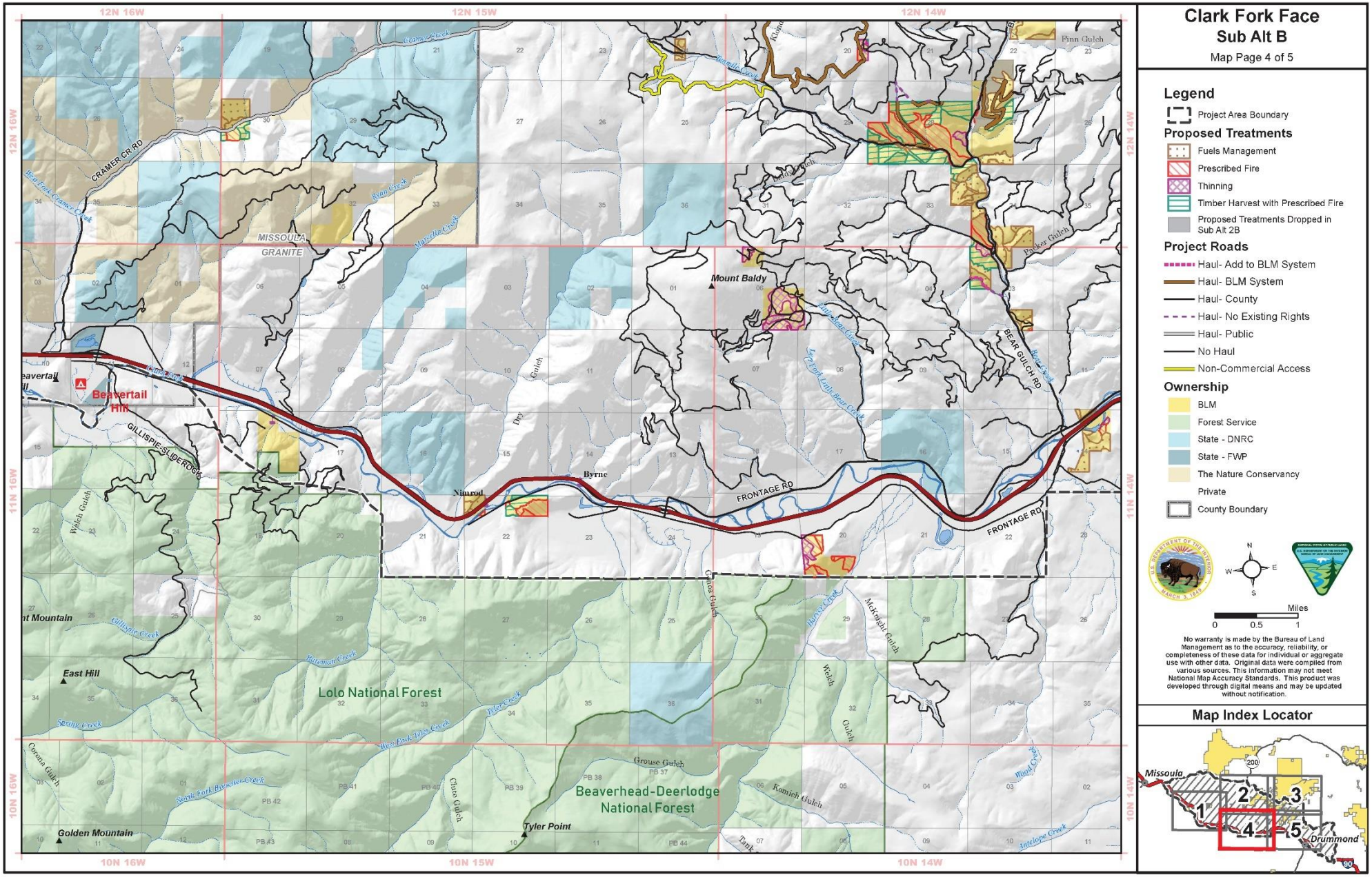

Clark Fork Face
Proposed Action
Map Page 5 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM
Haul- BLM System
Haul- County
Haul- No Existing Rights
No Haul
Proposed Construction Perm
Proposed Construction Temp
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
12N 14W
12N 13W
12N 12W
10N 14W
10N 13W
10N 12W
11N 14W
11N 12W
Finn Gulch
Parker Gulch
MULKEY GULCH
Mulkey Gulch
Joe Gulch
RATTLER GULCH
GRANITE POWELL
King Mountain
Sturgeon Mountain
Sturgeon Creek
Black Bear Creek
BEAR GULCH RD
Bear Creek
FRONTAGE RD
Clark Fork
Lyon Gulch
Edwards Gulch
High Creek
Drummond
271
MULLEN RD
Willow Creek
Antelope Creek

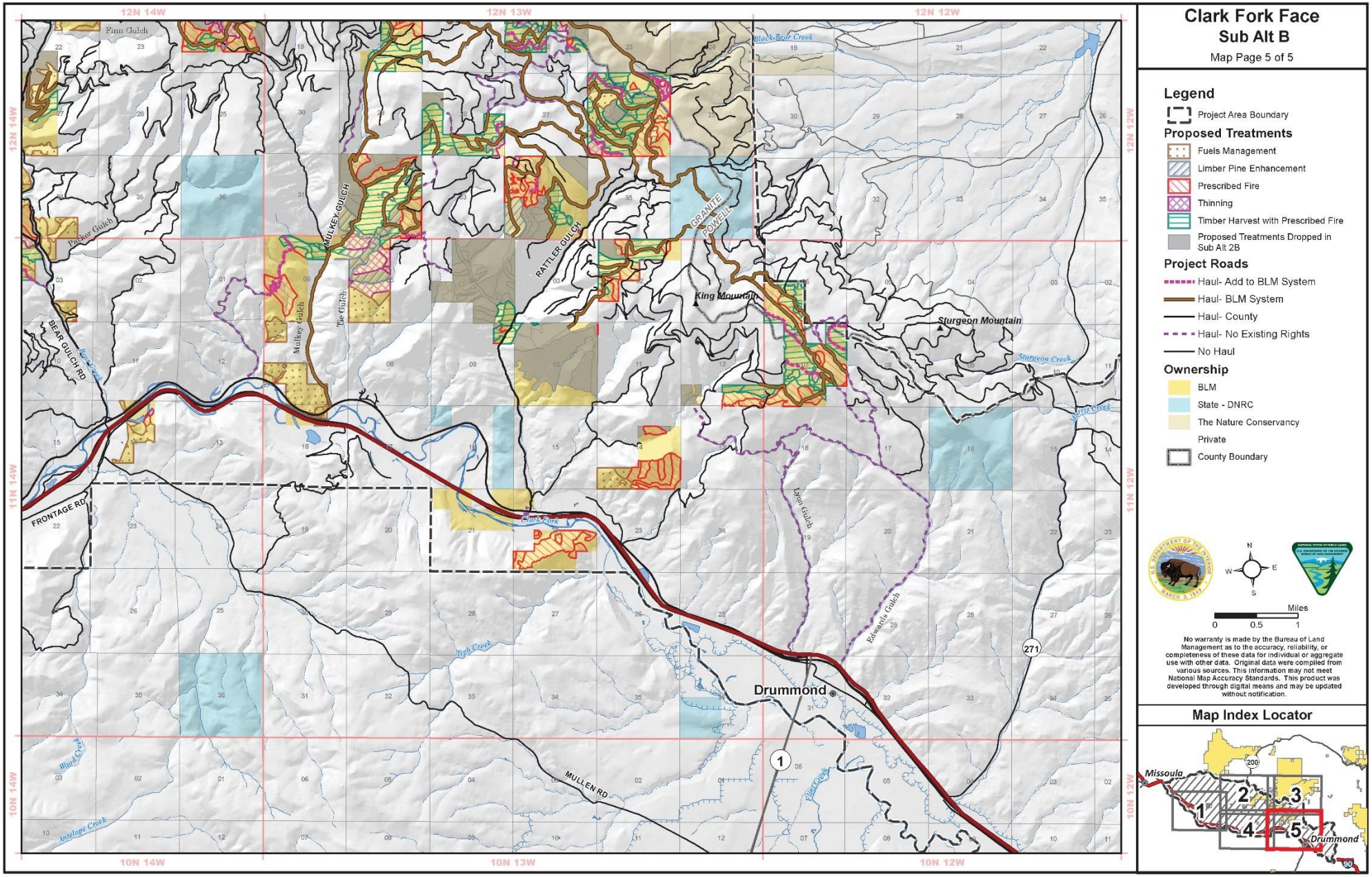
Sub Alternative 2b Maps (5 pages).



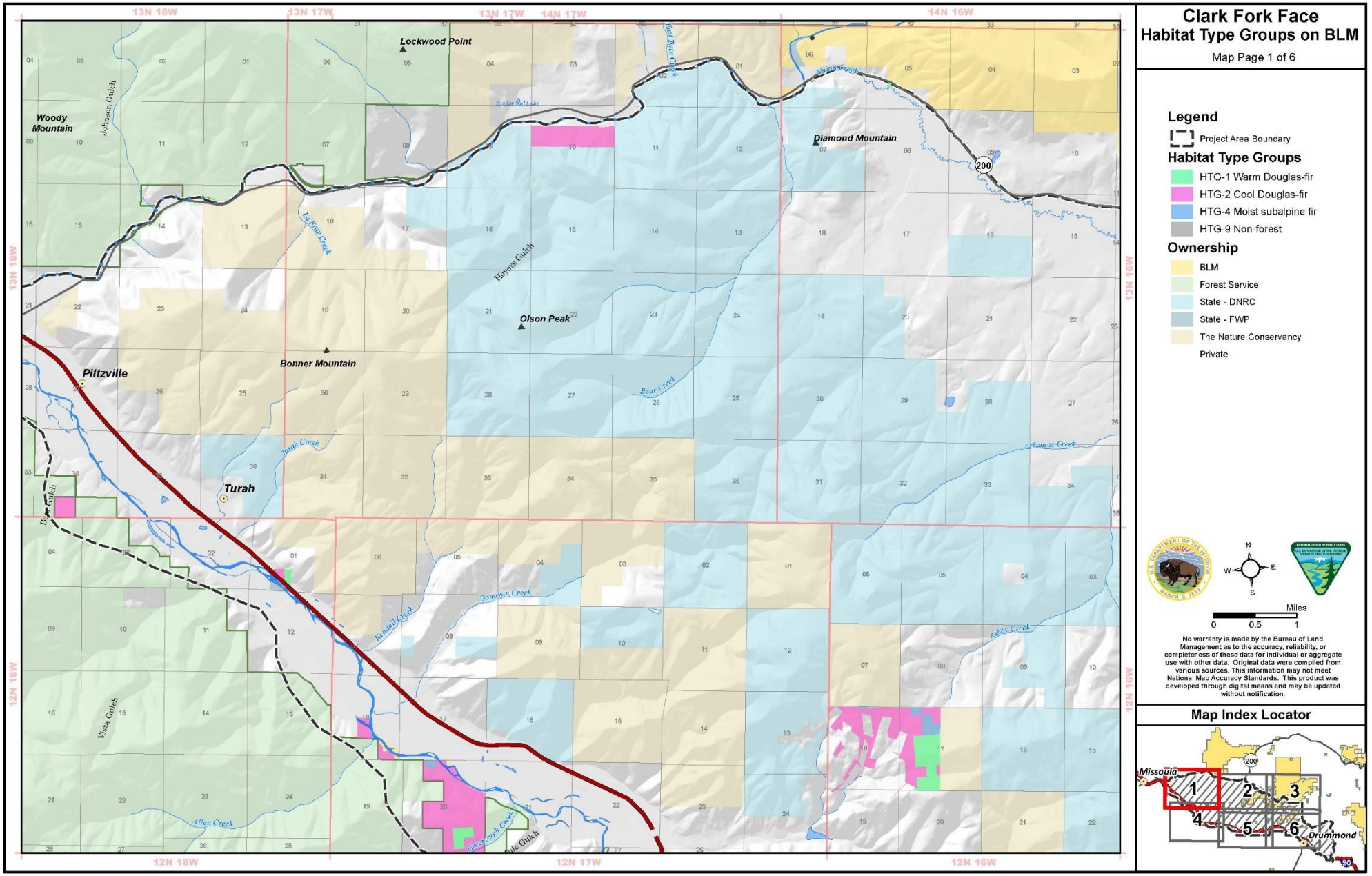

13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Potomac
POTOMAC RD
MORRISON LN
ASHBY CREEK RD
SWANSON LN
HOLE-IN-THE-WALL
GARNET RANGE RD
CAP WALLACE
Cap Wallace Gulch
Yreka
Coloma
MISSOULA
GRANITE
Union Peak
BEAR GULCH RD
Finn Gulch
Union Creek
Bishoe Creek
Ashby Creek
Smith Creek
Camas Creek
Bear Creek
Deal Creek
Kitsuntuk Creek
Missoula
Drummond
Clark Fork Face
Sub Alt B
Map Page 2 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
N
W
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Miles
0
0.5
1
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Map Index Locator
1
2
3
4
5

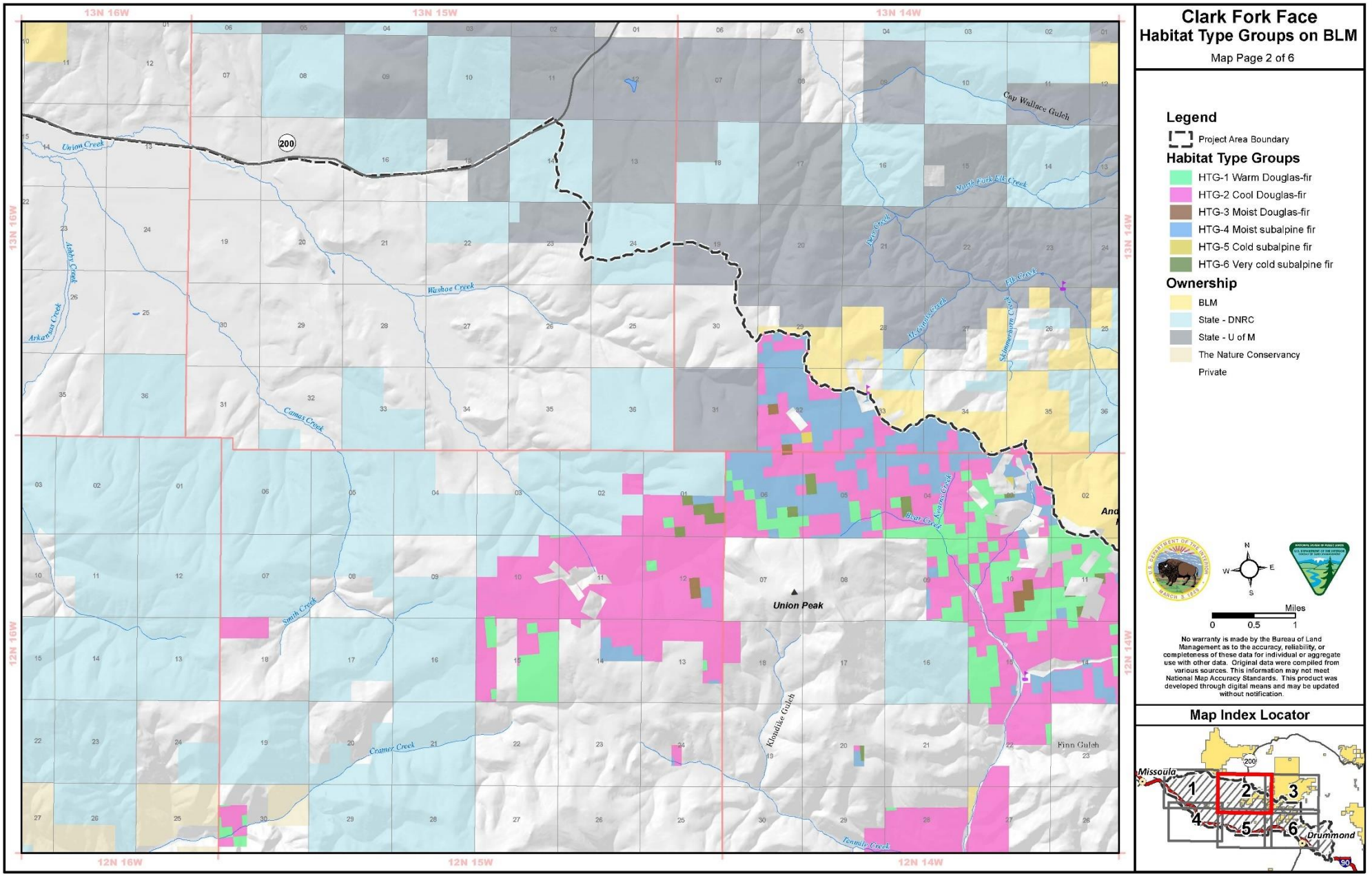

13N 14W
13N 13W
13N 12W
12N 14W
12N 13W
12N 12W
Clark Fork Face
Sub Alt B
Map Page 3 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
Wales Creek Wilderness Study Area
Elevation Mountain
Anderson Hill
Finn Gulch
Yreka
MISSOULA
POWELL
GRANITE
KENNEDY CR
KENO CR
DEER GULCH
MCELWAIN CR
HAMILTON GULCH
WALES CREEK RD
GARNET RANGE RD
DEEP CREEK
BEAR GULCH RD
DOUGLAS CR

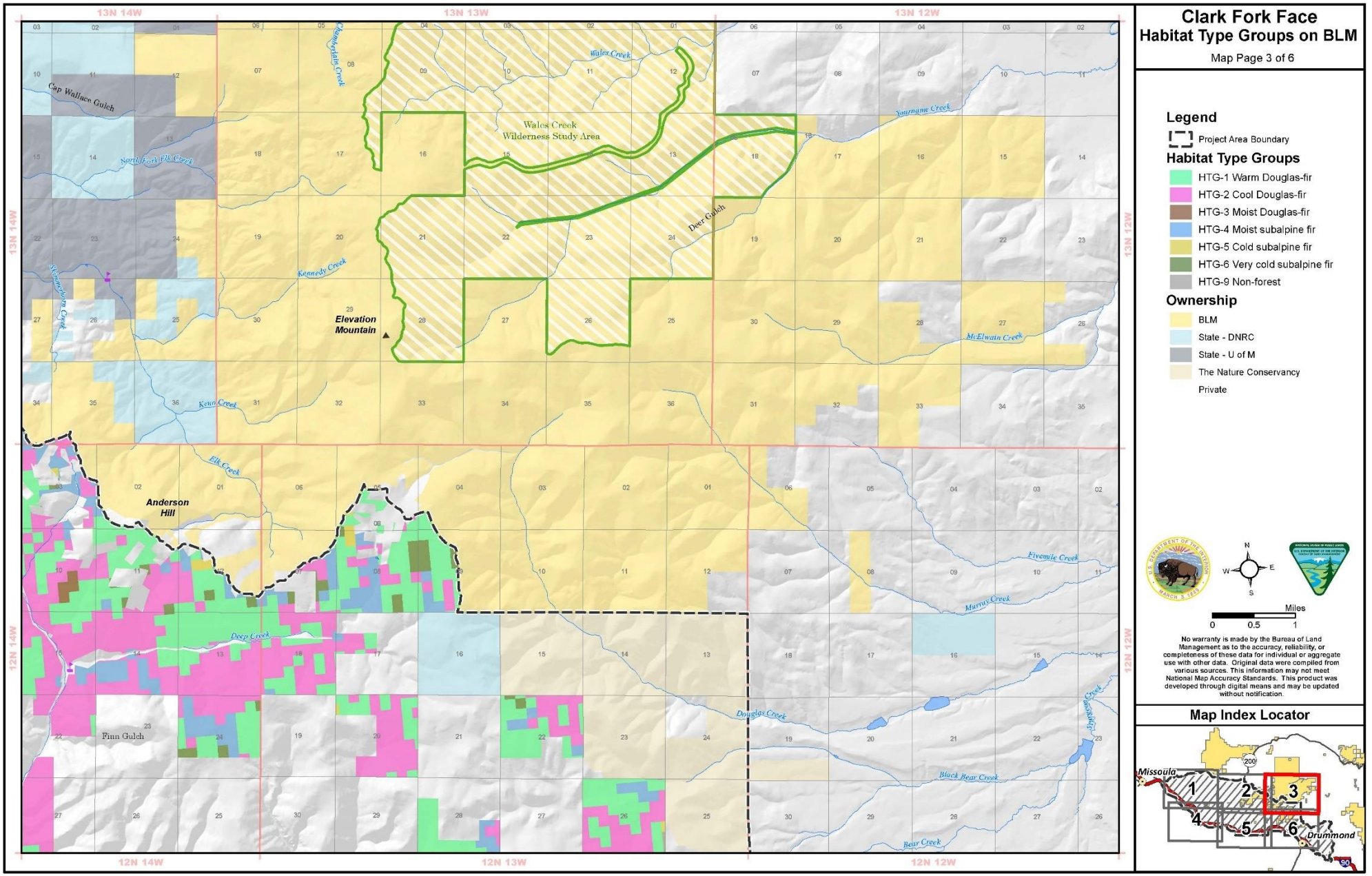

Clark Fork Face
Sub Alt B
Map Page 4 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Ownership
BLM
Forest Service
State - DNRC
State - FWP
The Nature Conservancy
Private
County Boundary
N
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Miles
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1
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Map Index Locator
Missoula
Drummond
1
2
3
4
5
12N 16W
12N 15W
12N 14W
11N 16W
11N 14W
10N 16W
10N 15W
10N 14W
CRAMER CR RD
MISSOULA
GRANITE
Mount Baldy
Beavertail Hill
GILLISPIE-SLIDEROCK
Nimrod
Byrne
FRONTAGE RD
BEAR GULCH RD
Lolo National Forest
Beaverhead-Deerlodge National Forest
East Hill
Golden Mountain
Tyler Point
Grouse Gulch
Finn Gulch
Packer Gulch
Welch Gulch
Dry Gulch
Gillispie Creek
Bateman Creek
Tyler Creek
Spring Creek
Corona Gulch
South Fork Bateman Creek
West Fork Tyler Creek
Clato Gulch
Komich Gulch
Antelope Creek
McKnight Gulch
Hunter Creek
Garlic Gulch
Tank

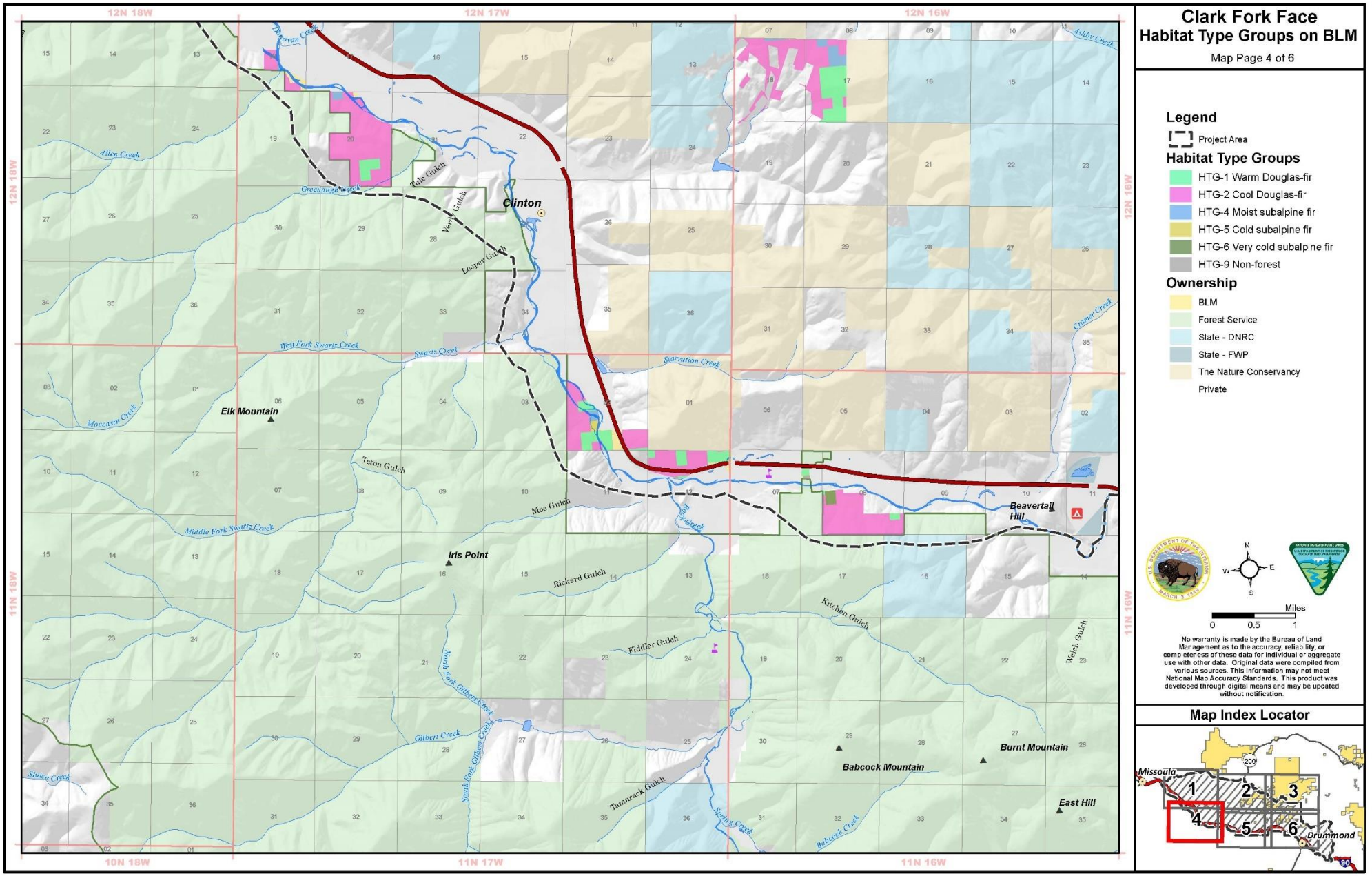

Clark Fork Face
Sub Alt B
Map Page 5 of 5
Legend
Project Area Boundary
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
No Haul
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W
Finn Gulch
Parker Gulch
MULKEY GULCH
Mulkey Gulch
Joe Gulch
RATTLER GULCH
GRANITE
POWELL
King Mountain
Sturgeon Mountain
Sturgeon Creek
Black Bear Creek
BEAR GULCH RD
Bear Creek
FRONTAGE RD
Clark Fork
Lynn Gulch
Edwards Gulch
Nelk Creek
Drummond
MULLEN RD
Flint Creek
Wood Creek
Antelope Creek
271
1

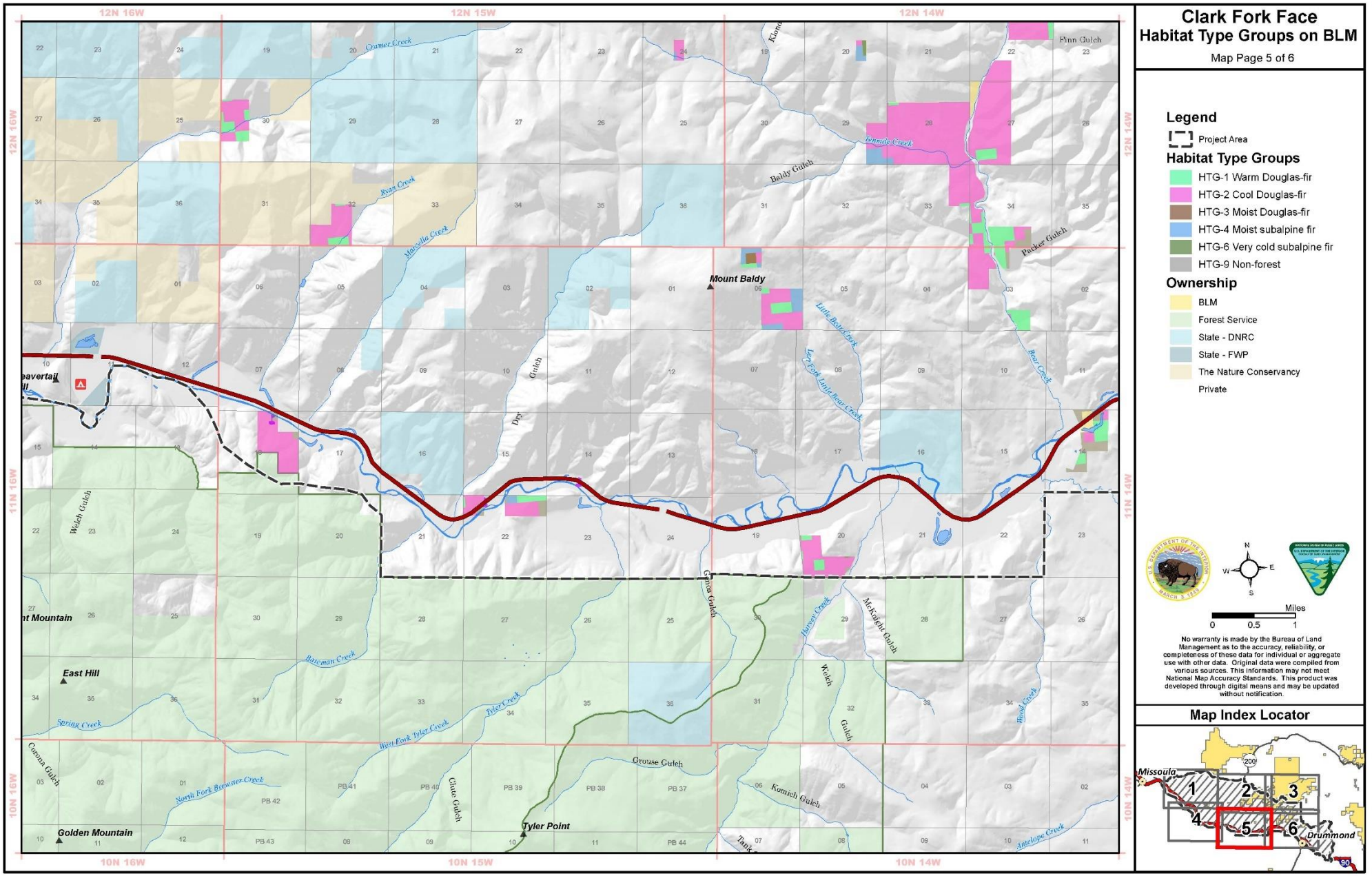
Habitat Type Groups on BLM lands within the planning area (6 pages).




13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Union Creek
Washoe Creek
Camas Creek
Arkansas Creek
Smith Creek
Cramer Creek
Bear Creek
Avalanche Creek
Klondike Gulch
Finn Gulch
Tenmile Creek
Cap Wallace Gulch
North Fork Elk Creek
Elk Creek
McGinnis Creek
Union Peak
200
Clark Fork Face
Habitat Type Groups on BLM
Map Page 2 of 6
Legend
Project Area Boundary
Habitat Type Groups
HTG-1 Warm Douglas-fir
HTG-2 Cool Douglas-fir
HTG-3 Moist Douglas-fir
HTG-4 Moist subalpine fir
HTG-5 Cold subalpine fir
HTG-6 Very cold subalpine fir
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
N
W
E
S
Miles
0
0.5
1
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Map Index Locator
Missoula
Drummond
1
2
3
4
5
6
200
90


13N 14W
13N 13W
13N 12W
12N 14W
12N 13W
12N 12W
Wales Creek
Wilderness Study Area
Elevation Mountain
Anderson Hill
Finn Gulch
Cap Wallace Gulch
North Fork Elk Creek
Kennedy Creek
Keno Creek
Elk Creek
Deep Creek
Douglas Creek
Black Bear Creek
Bear Creek
Fivemile Creek
Murray Creek
McElwain Creek
Deer Gulch
Tourname Creek
Clearwater Creek
Swamp Lakes Creek
Clark Fork Face
Habitat Type Groups on BLM
Map Page 3 of 6
Legend
Project Area Boundary
Habitat Type Groups
HTG-1 Warm Douglas-fir
HTG-2 Cool Douglas-fir
HTG-3 Moist Douglas-fir
HTG-4 Moist subalpine fir
HTG-5 Cold subalpine fir
HTG-6 Very cold subalpine fir
HTG-9 Non-forest
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
N
W
E
S
Miles
0
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1
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Map Index Locator
Missoula
Drummond
1
2
3
4
5
6
200
90


Clark Fork Face
Habitat Type Groups on BLM
Map Page 4 of 6
Legend
Project Area
Habitat Type Groups
HTG-1 Warm Douglas-fir
HTG-2 Cool Douglas-fir
HTG-4 Moist subalpine fir
HTG-5 Cold subalpine fir
HTG-6 Very cold subalpine fir
HTG-9 Non-forest
Ownership
BLM
Forest Service
State - DNRC
State - FWP
The Nature Conservancy
Private
12N 18W
12N 17W
12N 16W
11N 18W
11N 16W
10N 18W
11N 17W
11N 16W
Clinton
Elk Mountain
Iris Point
Beavertail Hill
Burnt Mountain
Babcock Mountain
East Hill
Allen Creek
Greenough Creek
Hale Gulch
Leeper Gulch
West Fork Swartz Creek
Swartz Creek
Moccasin Creek
Middle Fork Swartz Creek
Teton Gulch
Moe Gulch
Starvation Creek
Cramer Creek
Rickard Gulch
Fiddler Gulch
Kitchen Gulch
Welch Gulch
North Fork Gilbert Creek
Gilbert Creek
South Fork Gilbert Creek
Sluice Creek
Tamarack Gulch
Warm Creek
Babcock Creek
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
1
2
3
4
5
6
200
90



Clark Fork Face
Habitat Type Groups on BLM

Map Page 5 of 6

Legend

- Project Area

Habitat Type Groups

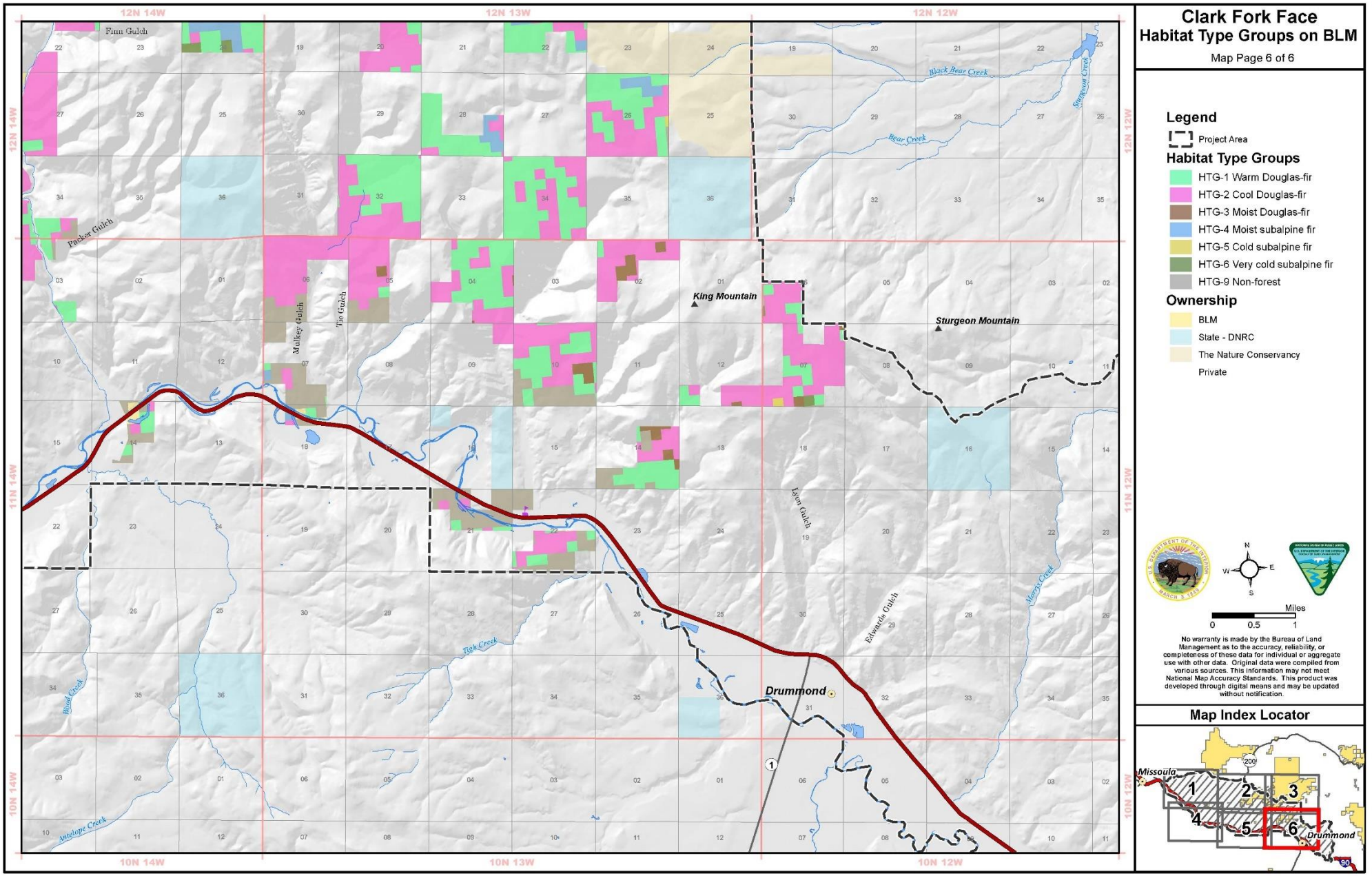
- HTG-1 Warm Douglas-fir
- HTG-2 Cool Douglas-fir
- HTG-3 Moist Douglas-fir
- HTG-4 Moist subalpine fir
- HTG-6 Very cold subalpine fir
- HTG-9 Non-forest

Ownership

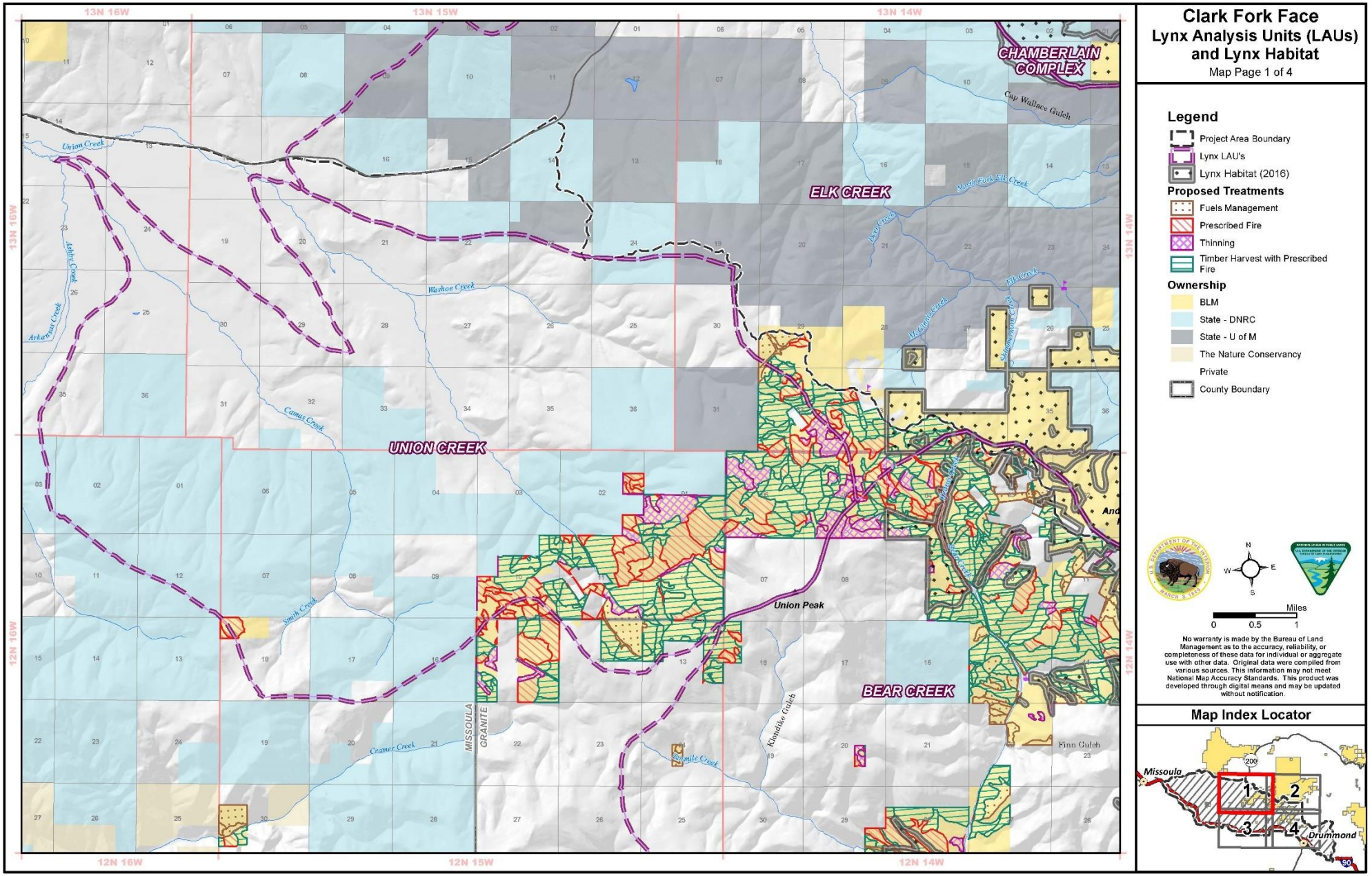
- BLM
- Forest Service
- State - DNRC
- State - FWP
- The Nature Conservancy
- Private

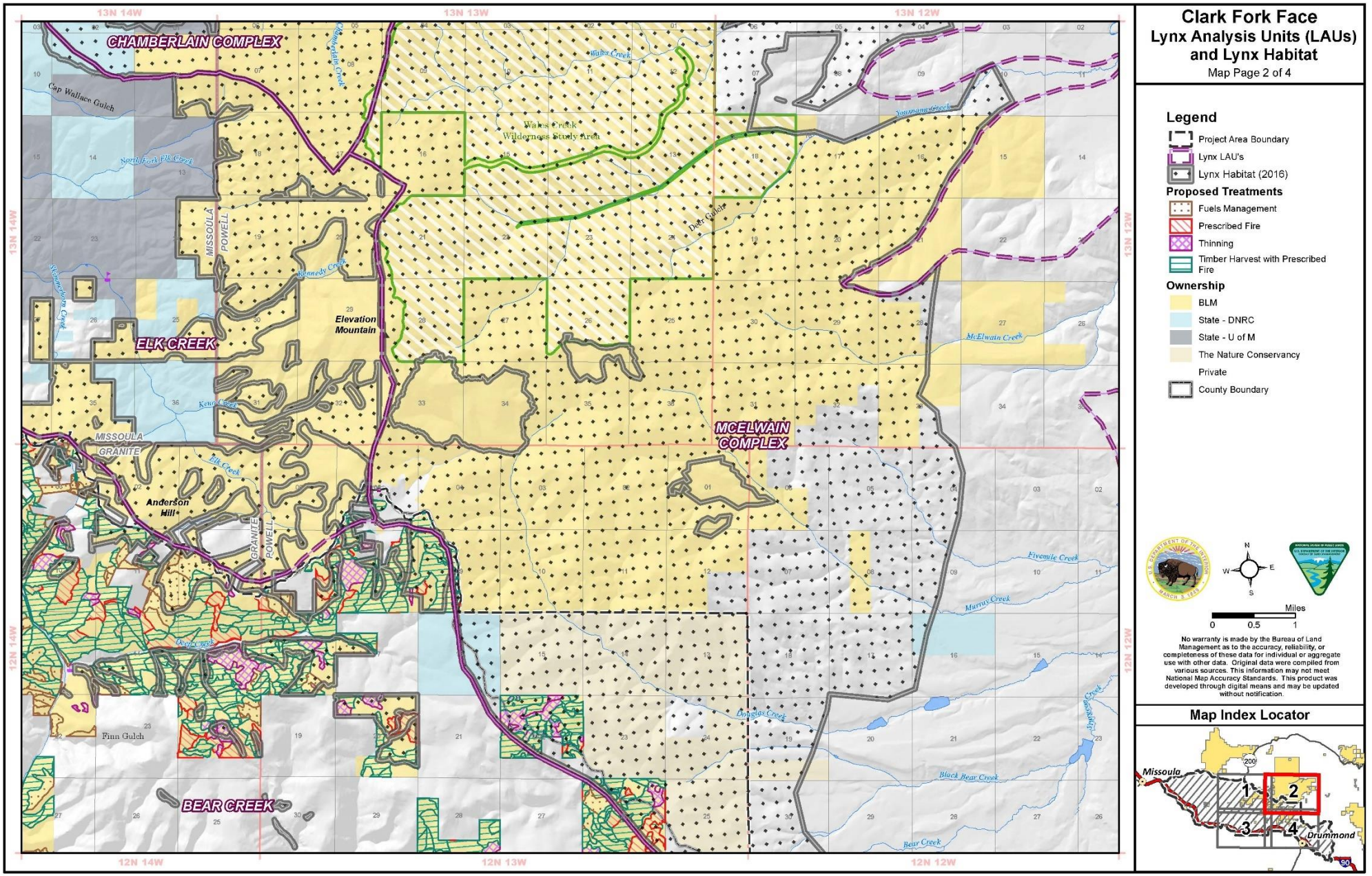
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Map Index Locator


Clark Fork Face
Habitat Type Groups on BLM
Map Page 6 of 6
Legend
Project Area
Habitat Type Groups
HTG-1 Warm Douglas-fir
HTG-2 Cool Douglas-fir
HTG-3 Moist Douglas-fir
HTG-4 Moist subalpine fir
HTG-5 Cold subalpine fir
HTG-6 Very cold subalpine fir
HTG-9 Non-forest
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W
Finn Gulch
Packer Gulch
Mulkey Gulch
Fin Gulch
King Mountain
Sturgeon Mountain
Black Bear Creek
Bear Creek
Sturgeon Creek
Lyon Gulch
Edwards Gulch
Morris Creek
Tish Creek
Wood Creek
Antelope Creek
Drummond

Alternative 2 Proposed Action with Lynx Analysis Units (LAUs) and Lynx Habitat maps (4 pages).





Clark Fork Face
Lynx Analysis Units (LAUs) and Lynx Habitat
Map Page 2 of 4

Legend

- Project Area Boundary
- Lynx LAU's
- Lynx Habitat (2016)

Proposed Treatments

- Fuels Management
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire

Ownership

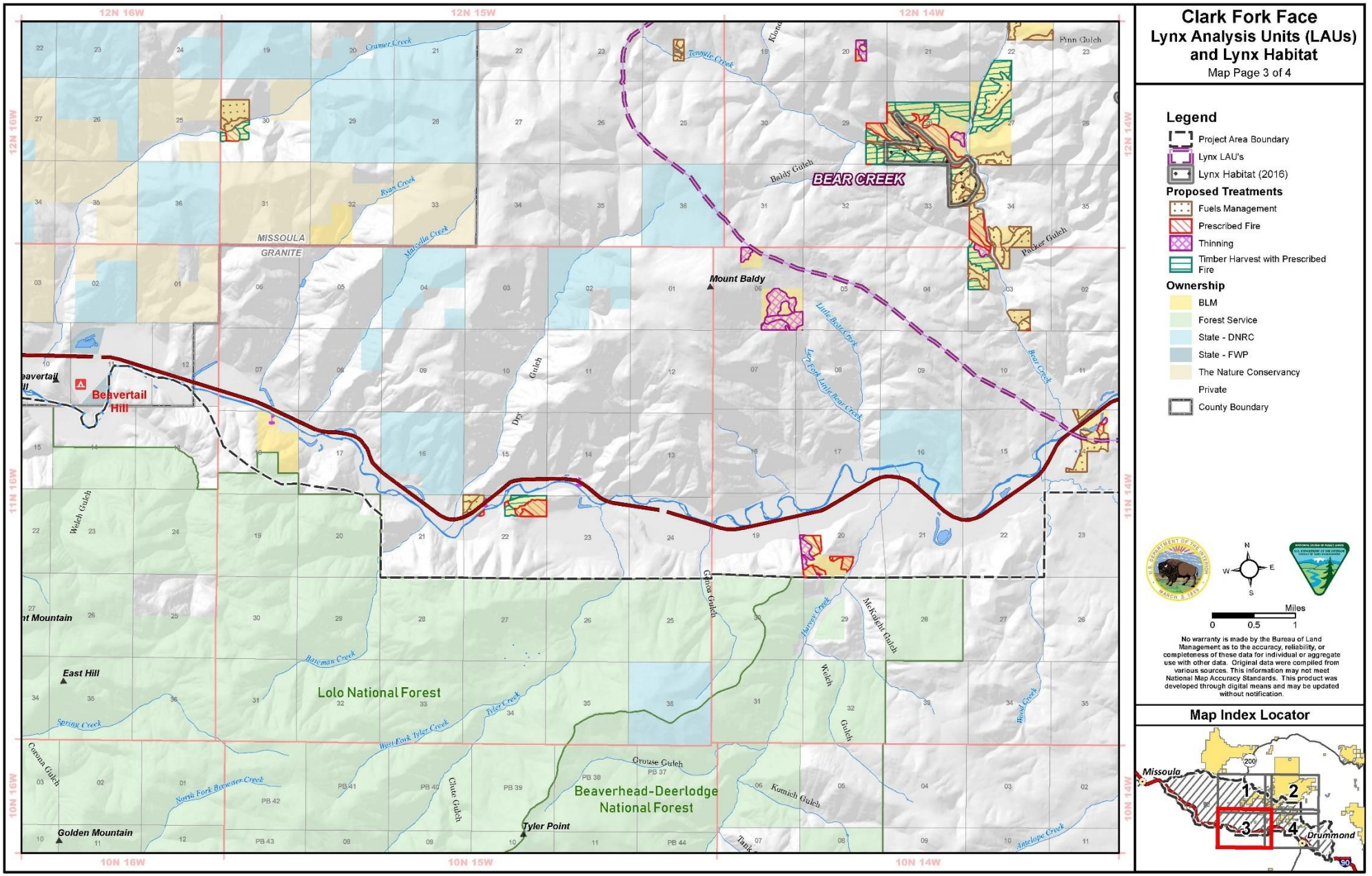
- BLM
- State - DNRC
- State - U of M
- The Nature Conservancy
- Private
- County Boundary

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Miles
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Map Index Locator



Clark Fork Face
Lynx Analysis Units (LAUs) and Lynx Habitat

Map Page 3 of 4

Legend

- Project Area Boundary
- Lynx LAU's
- Lynx Habitat (2016)

Proposed Treatments

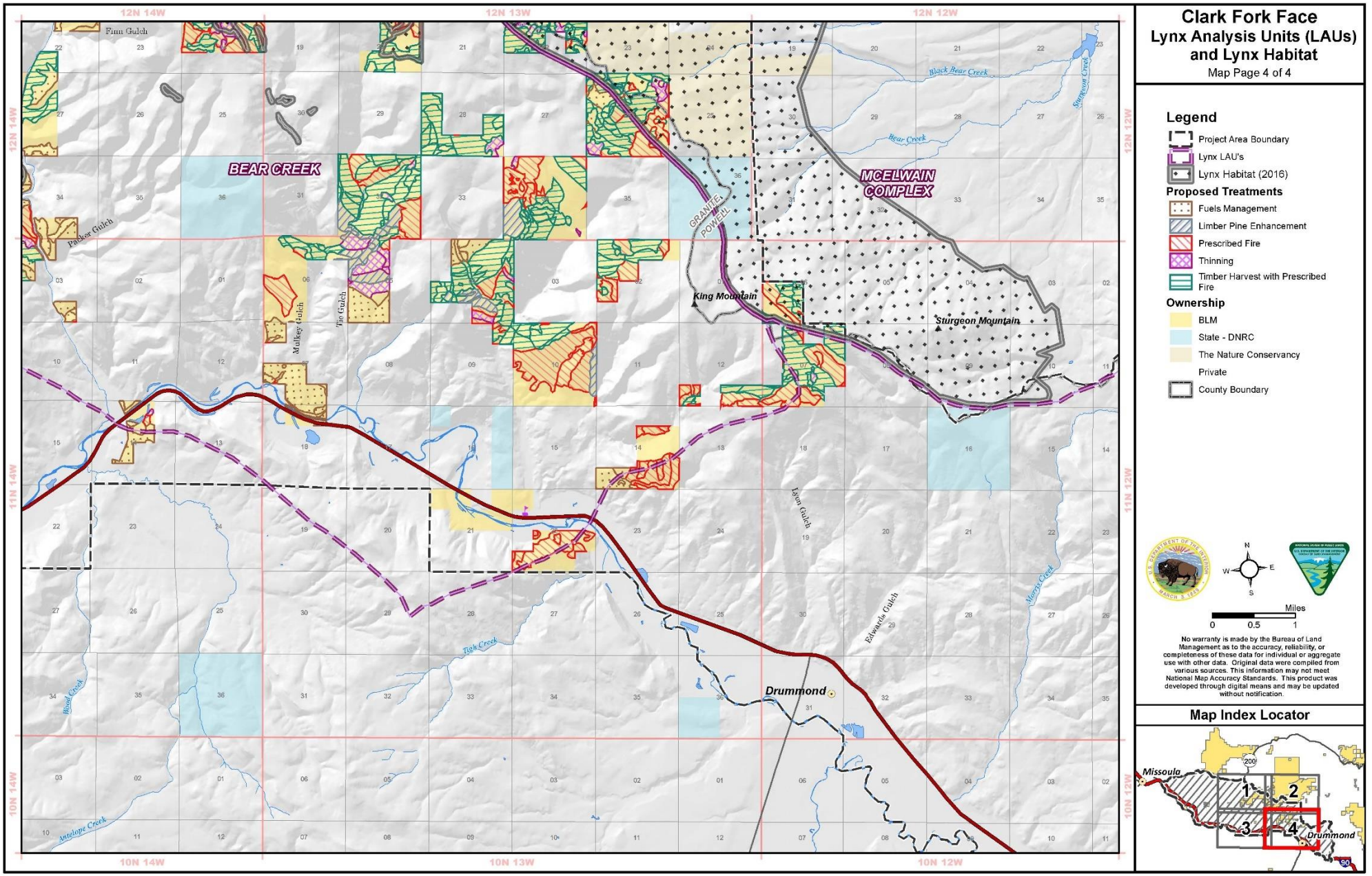
- Fuels Management
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire

Ownership

- BLM
- Forest Service
- State - DNRC
- State - FWP
- The Nature Conservancy
- Private
- County Boundary

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Map Index Locator



Clark Fork Face
Lynx Analysis Units (LAUs) and Lynx Habitat
Map Page 4 of 4

Legend

- Project Area Boundary
- Lynx LAU's
- Lynx Habitat (2016)

Proposed Treatments

- Fuels Management
- Limber Pine Enhancement
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire

Ownership

- BLM
- State - DNRC
- The Nature Conservancy
- Private
- County Boundary

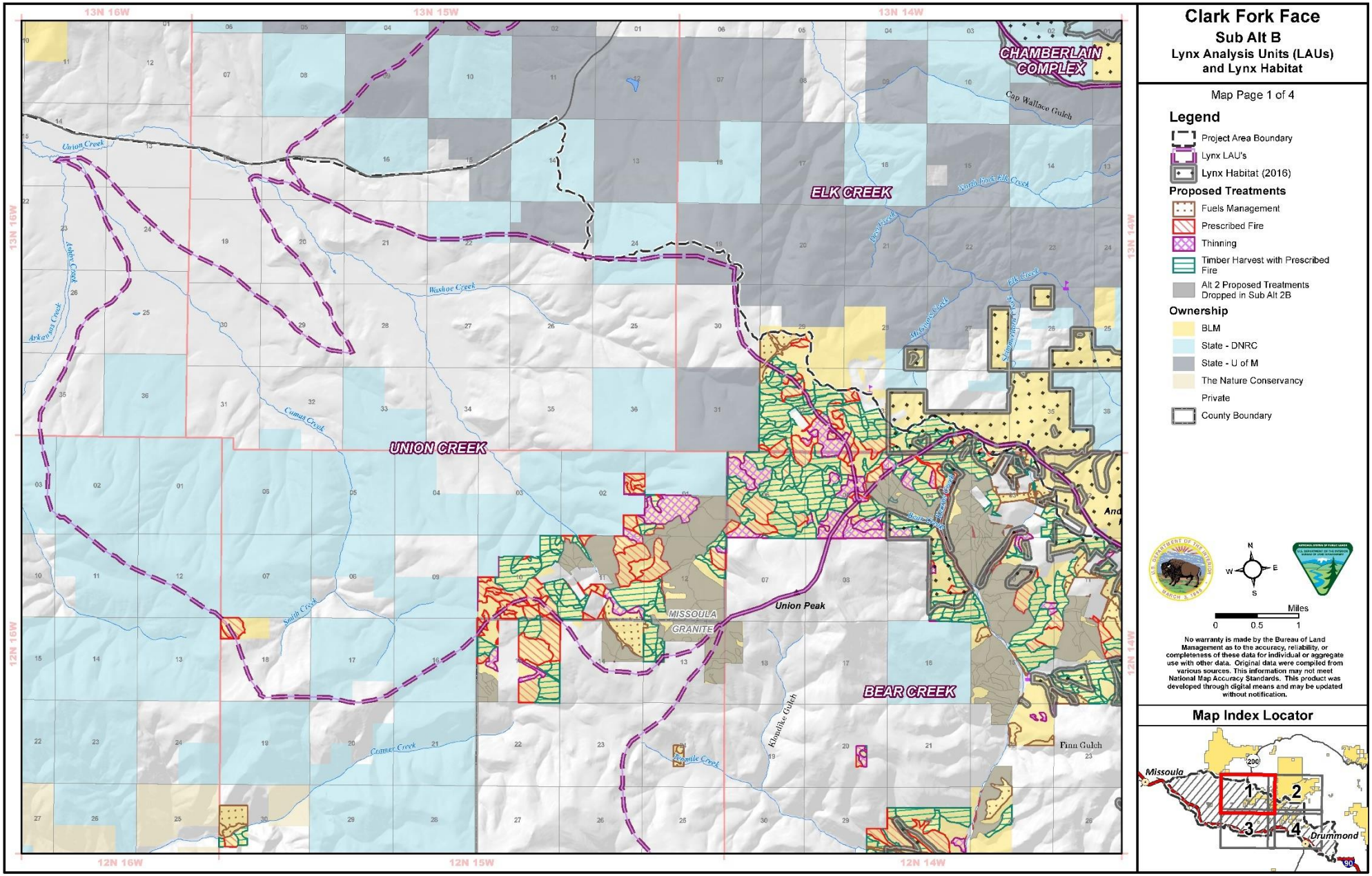
N W E S

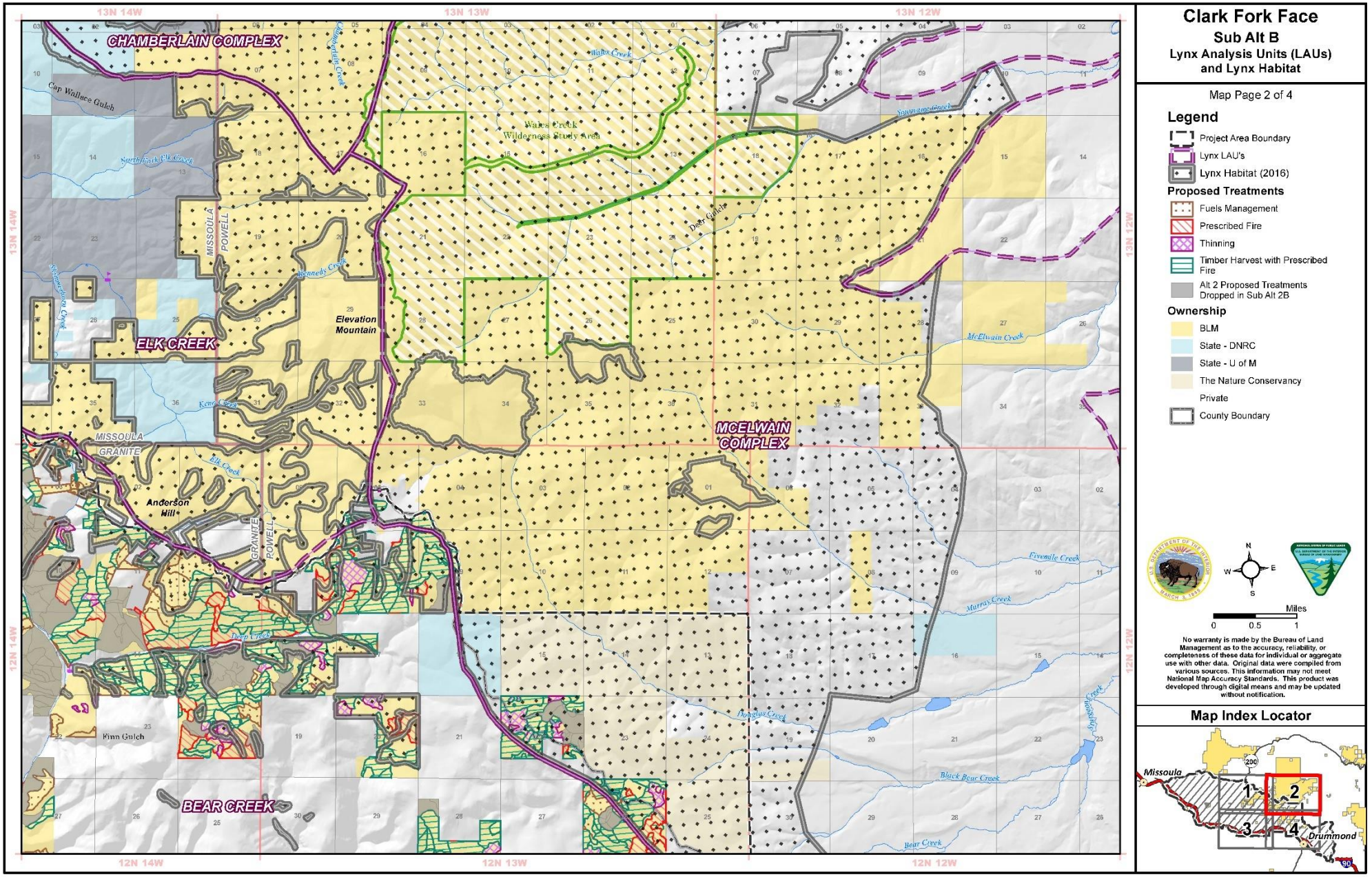
Miles
0 0.5 1

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Map Index Locator

Sub alternative 2b with Lynx Analysis Units (LAUs) and Lynx Habitat maps (4 pages).





Clark Fork Face

Sub Alt B

Lynx Analysis Units (LAUs) and Lynx Habitat

Map Page 2 of 4

Legend

- Project Area Boundary
- Lynx LAU's
- Lynx Habitat (2016)

Proposed Treatments

- Fuels Management
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire
- Alt 2 Proposed Treatments Dropped in Sub Alt 2B

Ownership

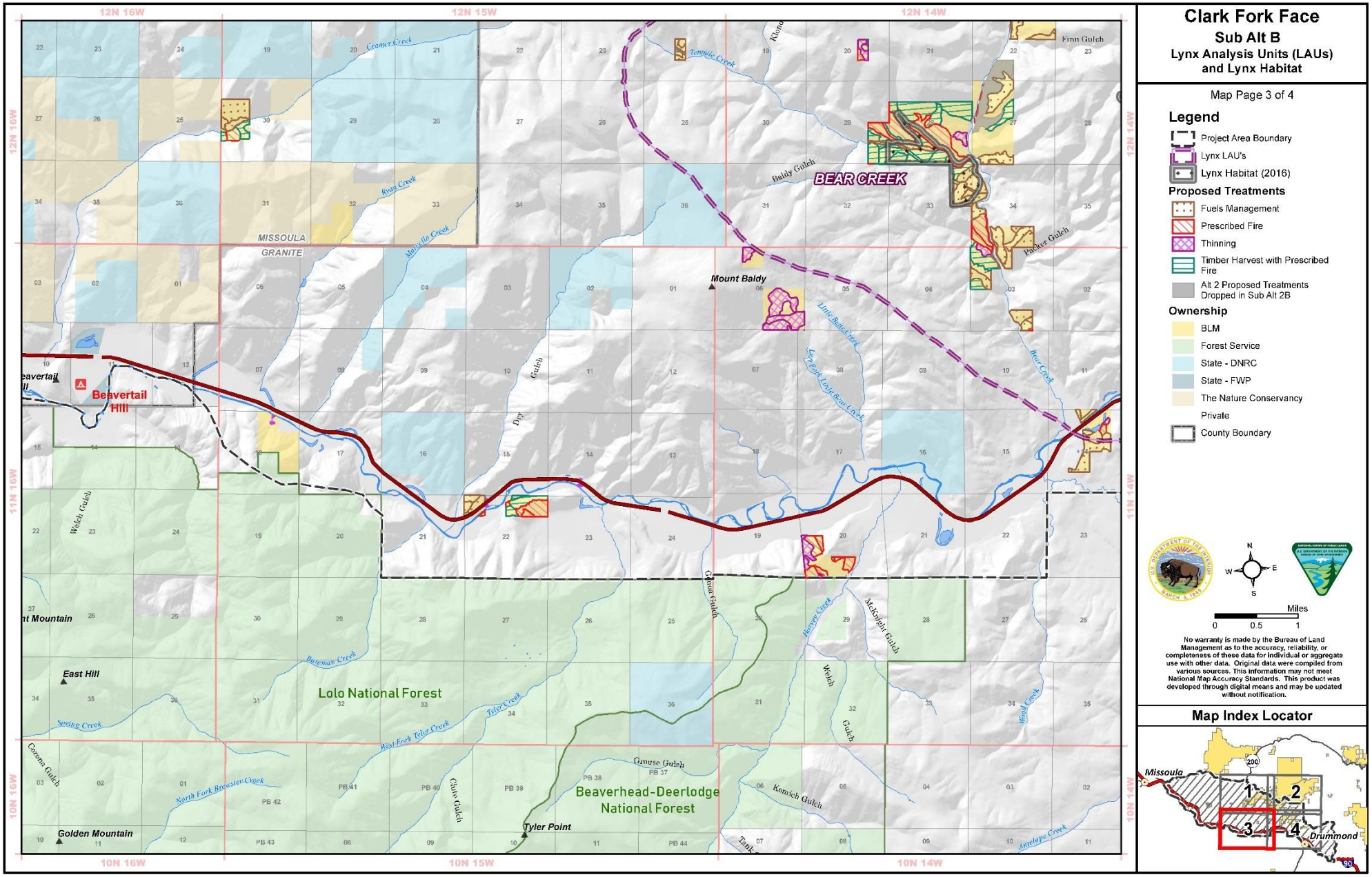
- BLM
- State - DNRC
- State - U of M
- The Nature Conservancy
- Private
- County Boundary

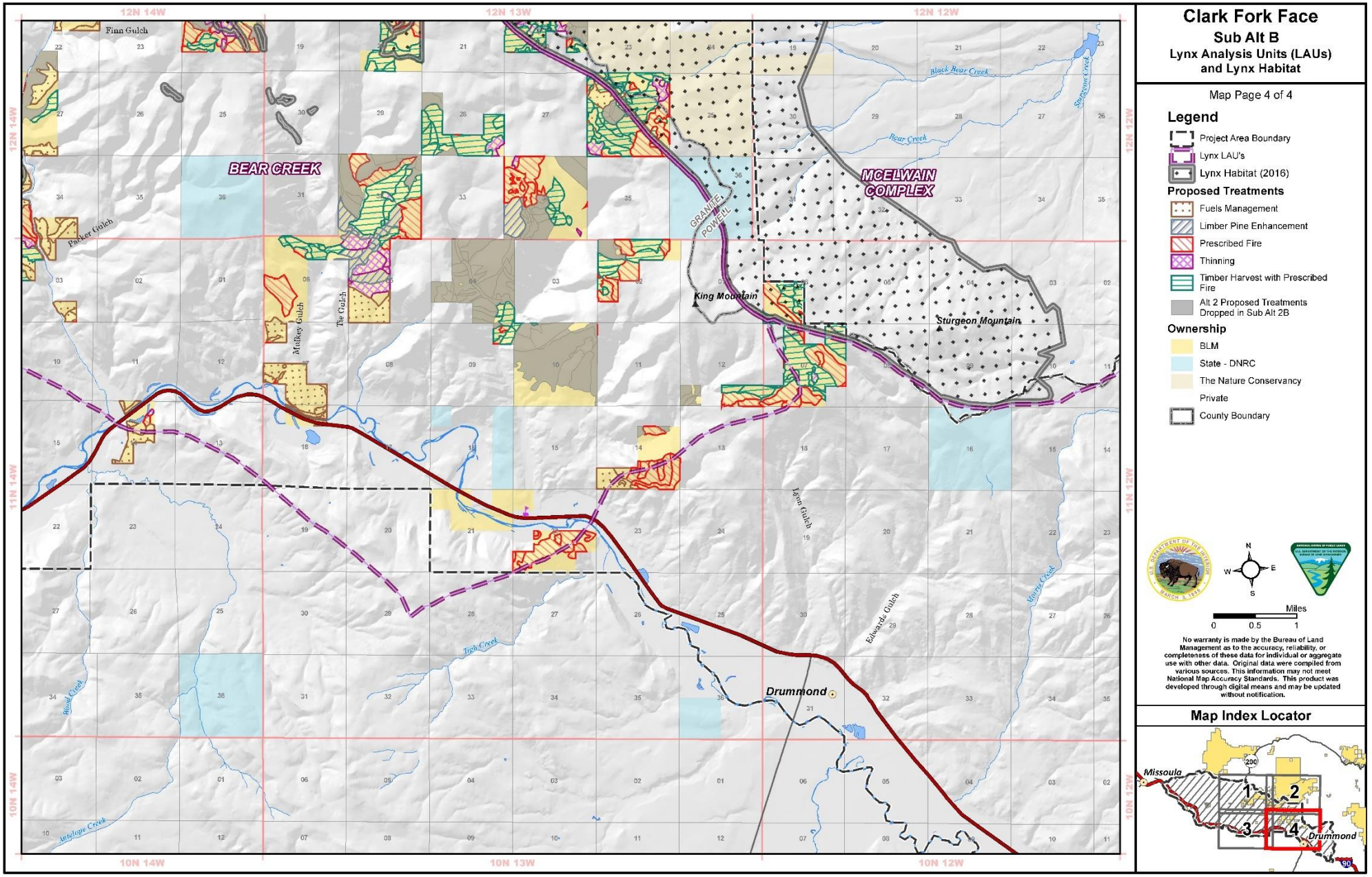
N
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Miles
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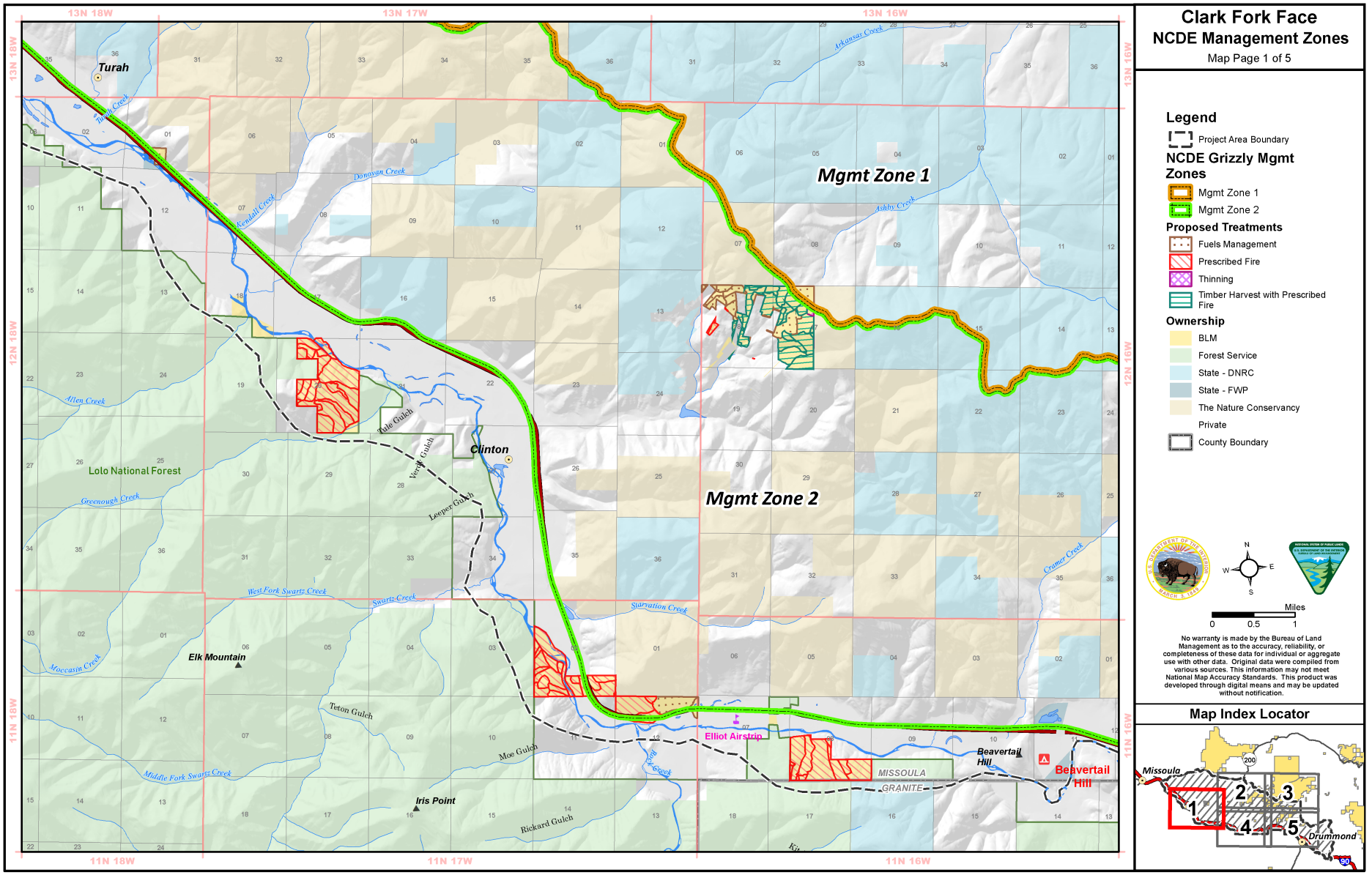
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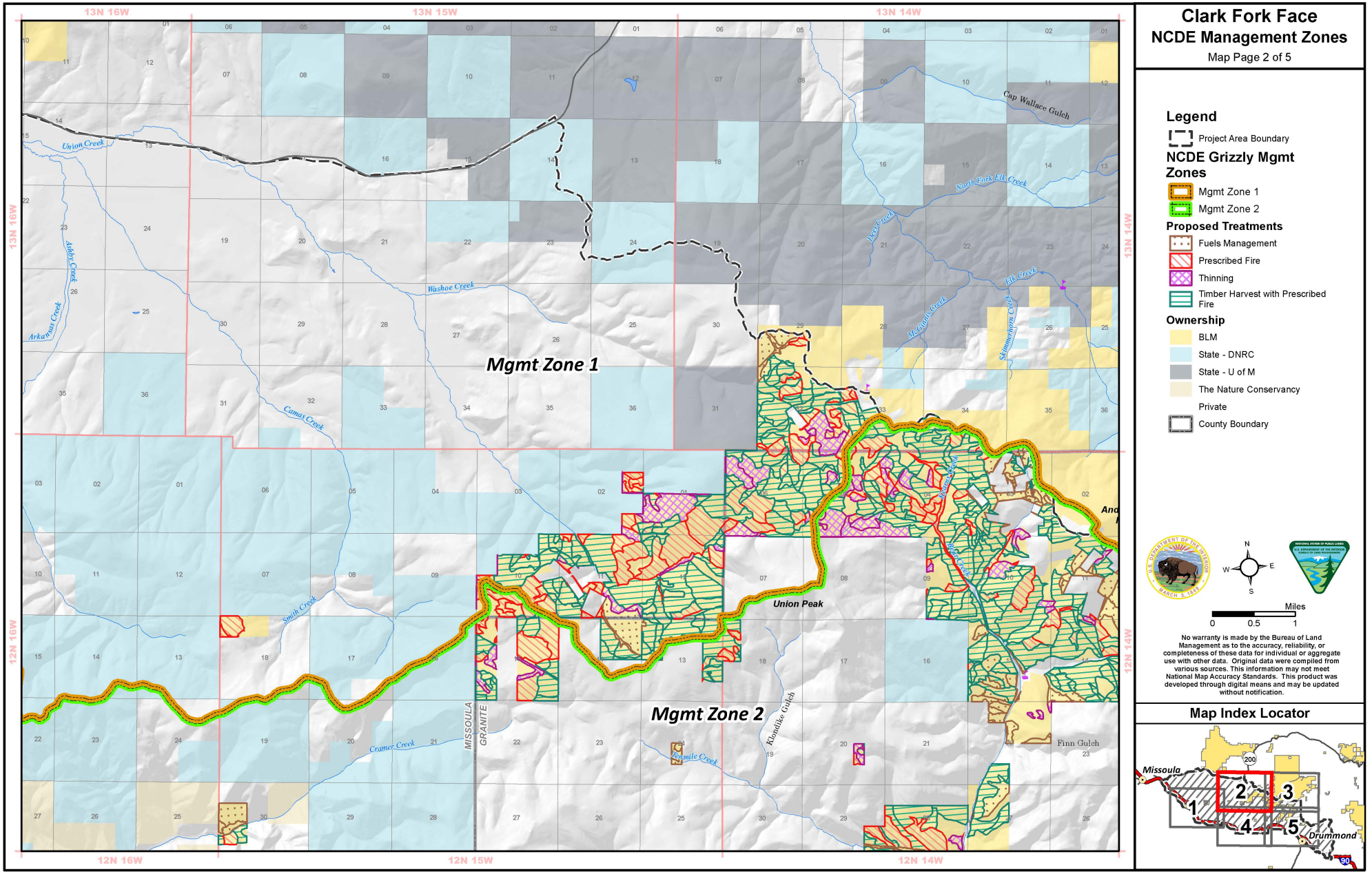
Map Index Locator

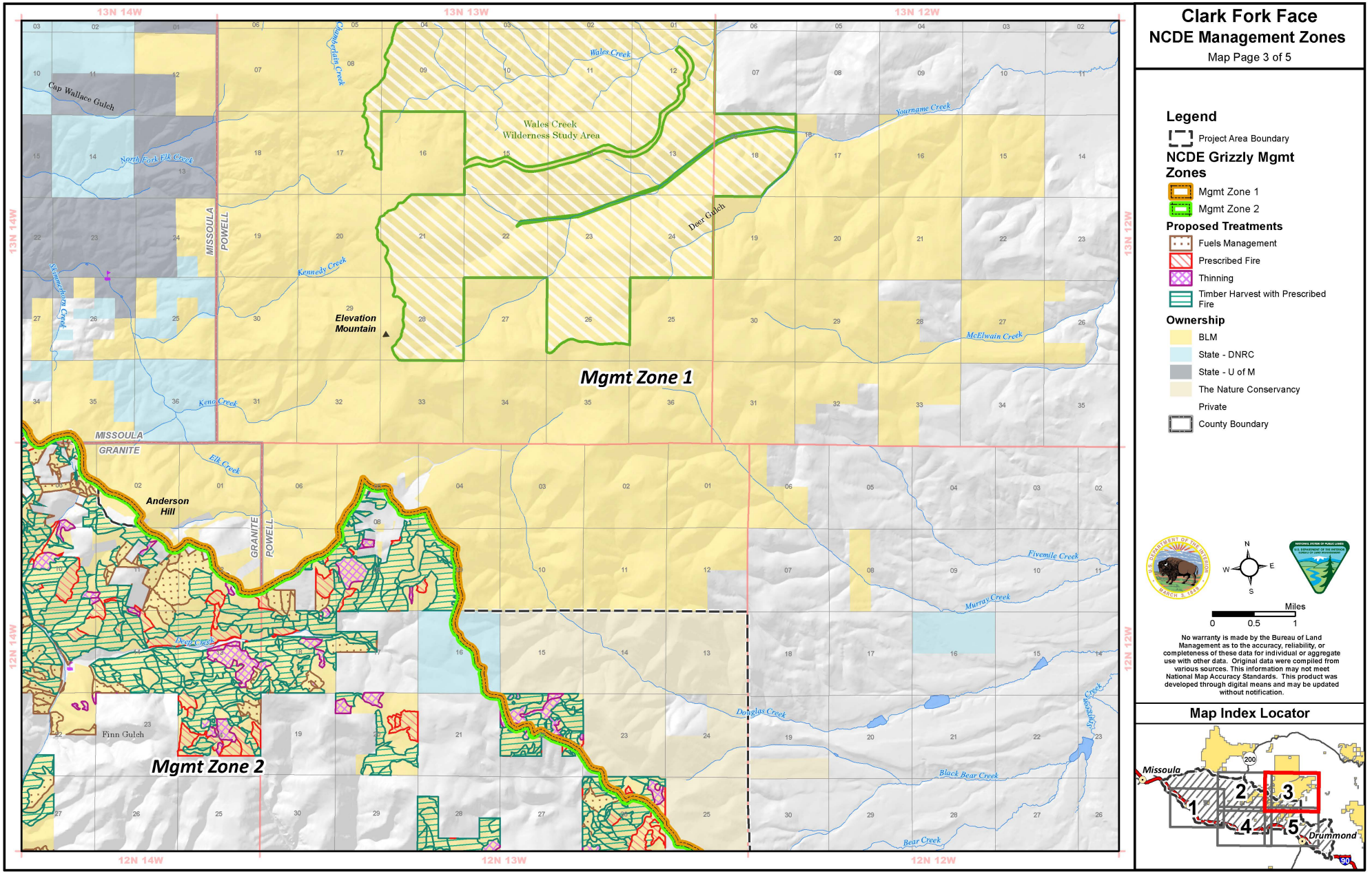

12N 16W
12N 15W
12N 14W
10N 16W
10N 15W
10N 14W
11N 16W
11N 14W
BEAR CREEK
MISSOULA
GRANITE
Mount Baldy
Beavertail Hill
East Hill
Golden Mountain
Tyler Point
Lolo National Forest
Beaverhead-Deerlodge National Forest
Cramer Creek
Tenmile Creek
Finn Gulch
Baldy Gulch
Ryan Creek
Marcella Creek
Packer Gulch
Little Bear Creek
Dry Gulch
Welch Gulch
Bateman Creek
Spring Creek
Tyler Creek
West Fork Tyler Creek
Corona Gulch
North Fork Brewster Creek
Clute Gulch
Grouse Gulch
Komich Gulch
Gilmor Gulch
Harvey Creek
McKnight Gulch
Welch Gulch
Wood Creek
Antelope Creek
Heart Creek
Tank
Clark Fork Face
Sub Alt B
Lynx Analysis Units (LAUs) and Lynx Habitat
Map Page 3 of 4
Legend
Project Area Boundary
Lynx LAU's
Lynx Habitat (2016)
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Ownership
BLM
Forest Service
State - DNRC
State - FWP
The Nature Conservancy
Private
County Boundary
N
W
E
S
Miles
0
0.5
1
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Index Locator
Missoula
Drummond
1
2
3
4


12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W
Finn Gulch
BEAR CREEK
MCELWAIN COMPLEX
Packer Gulch
Mulkey Gulch
The Gulch
GRANITE
POWELL
King Mountain
Sturgeon Mountain
Black Bear Creek
Bear Creek
Sturgeon Creek
Tobin Gulch
Edwards Gulch
Myers Creek
Tich Creek
Rivid Creek
Mokelopie Creek
Drummond
Clark Fork Face
Sub Alt B
Lynx Analysis Units (LAUs)
and Lynx Habitat
Map Page 4 of 4
Legend
Project Area Boundary
Lynx LAU's
Lynx Habitat (2016)
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
N
W
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Miles
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1
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Map Index Locator
Missoula
200
1
2
3
4
Drummond
90

Alternative 2 Proposed Action with NCDE Management Zones maps (5 pages).




13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Mgmt Zone 1
Mgmt Zone 2
Union Peak
Cap Wallace Gulch
Union Creek
Washoe Creek
Camas Creek
Smith Creek
Cramer Creek
Yenmile Creek
Klondike Gulch
Finn Gulch
North Fork Elk Creek
Elk Creek
McGrath Creek
Timmerman Creek
Deer Creek
Ashby Creek
Arkansas Creek
MISSOULA
GRANITE
Clark Fork Face
NCDE Management Zones
Map Page 2 of 5
Legend
Project Area Boundary
NCDE Grizzly Mgmt Zones
Mgmt Zone 1
Mgmt Zone 2
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
N
W
E
S
Miles
0
0.5
1
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Map Index Locator
Missoula
Drummond
200
90
1
2
3
4
5



Clark Fork Face
NCDE Management Zones
Map Page 3 of 5

Legend

- Project Area Boundary

NCDE Grizzly Mgmt Zones

- Mgmt Zone 1
- Mgmt Zone 2

Proposed Treatments

- Fuels Management
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire

Ownership

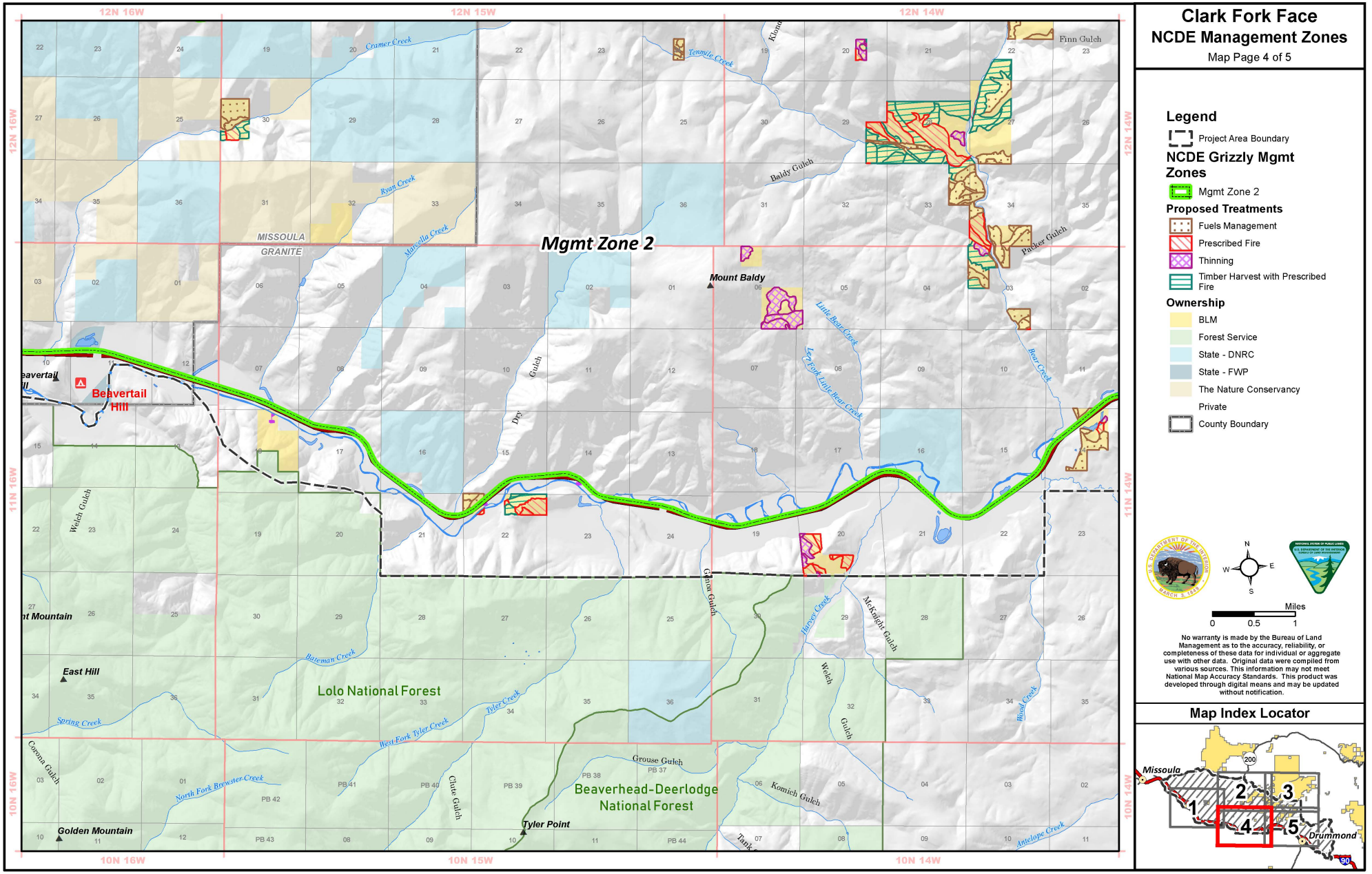
- BLM
- State - DNRC
- State - U of M
- The Nature Conservancy
- Private
- County Boundary

N W E S

Miles
0 0.5 1

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Map Index Locator



Clark Fork Face
NCDE Management Zones
Map Page 4 of 5

Legend

Project Area Boundary

NCDE Grizzly Mgmt Zones

Mgmt Zone 2

Proposed Treatments

- Fuels Management
- Prescribed Fire
- Thinning
- Timber Harvest with Prescribed Fire

Ownership

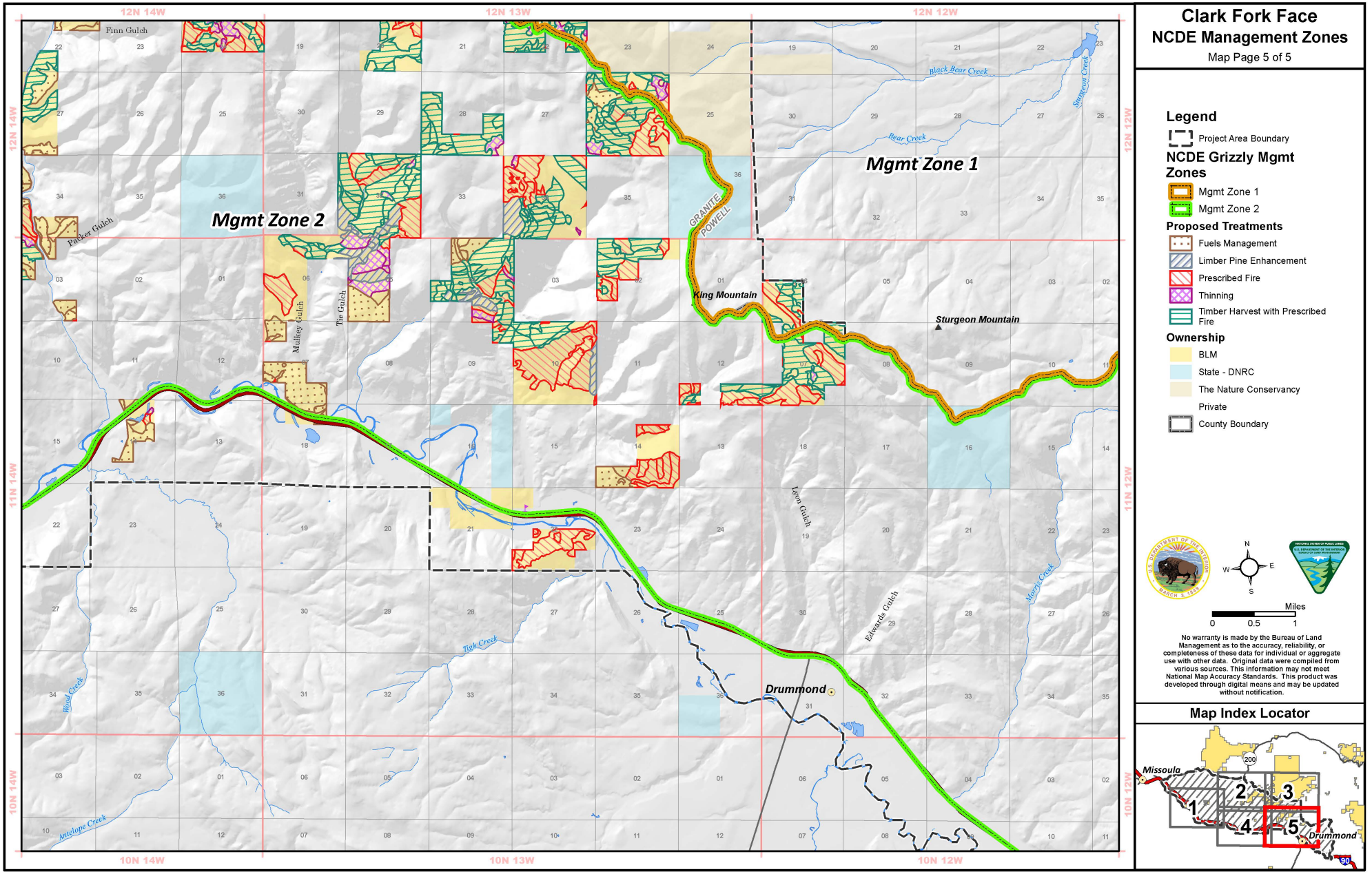
- BLM
- Forest Service
- State - DNRC
- State - FWP
- The Nature Conservancy
- Private
- County Boundary

N W E S

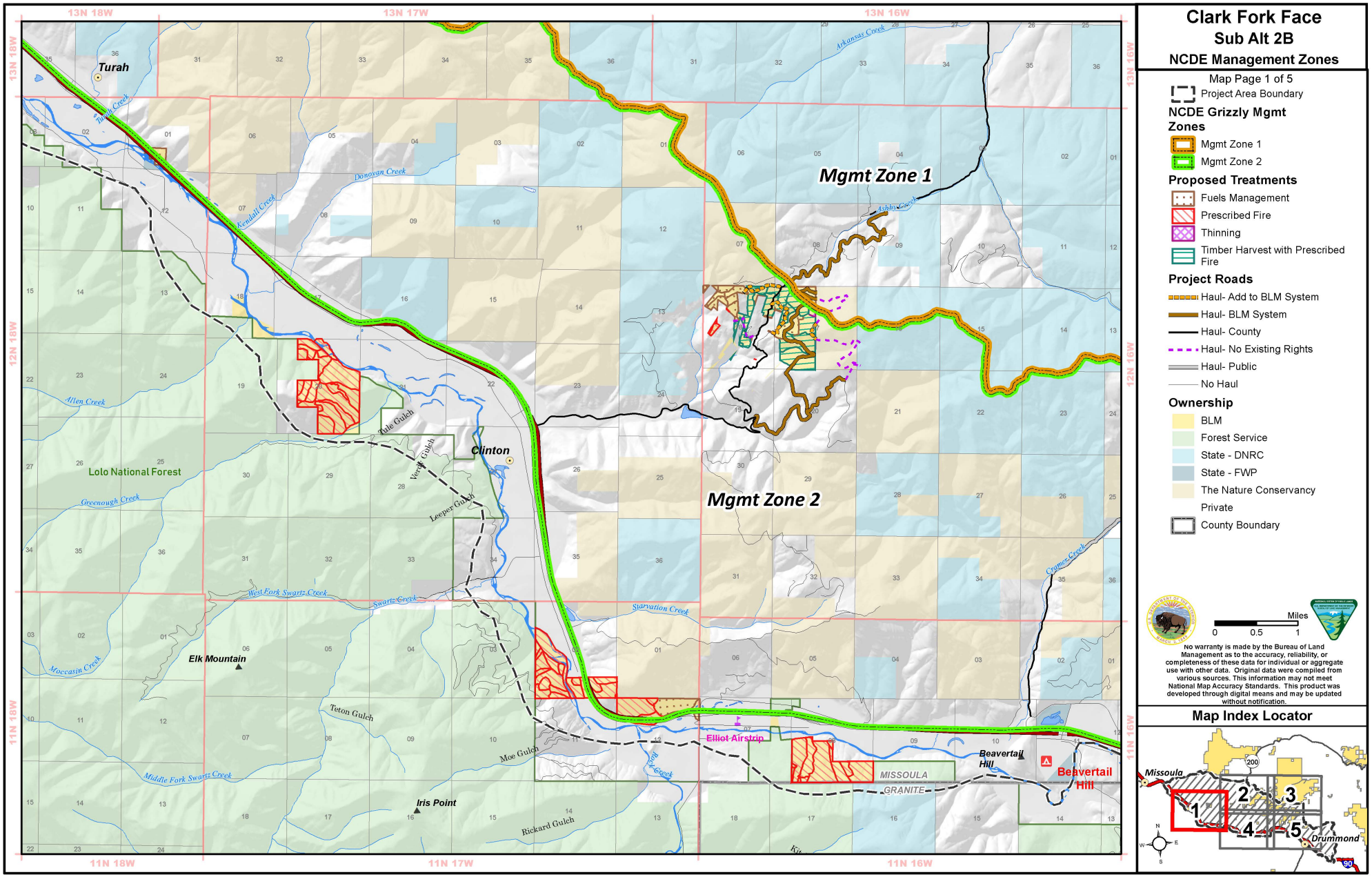
Miles
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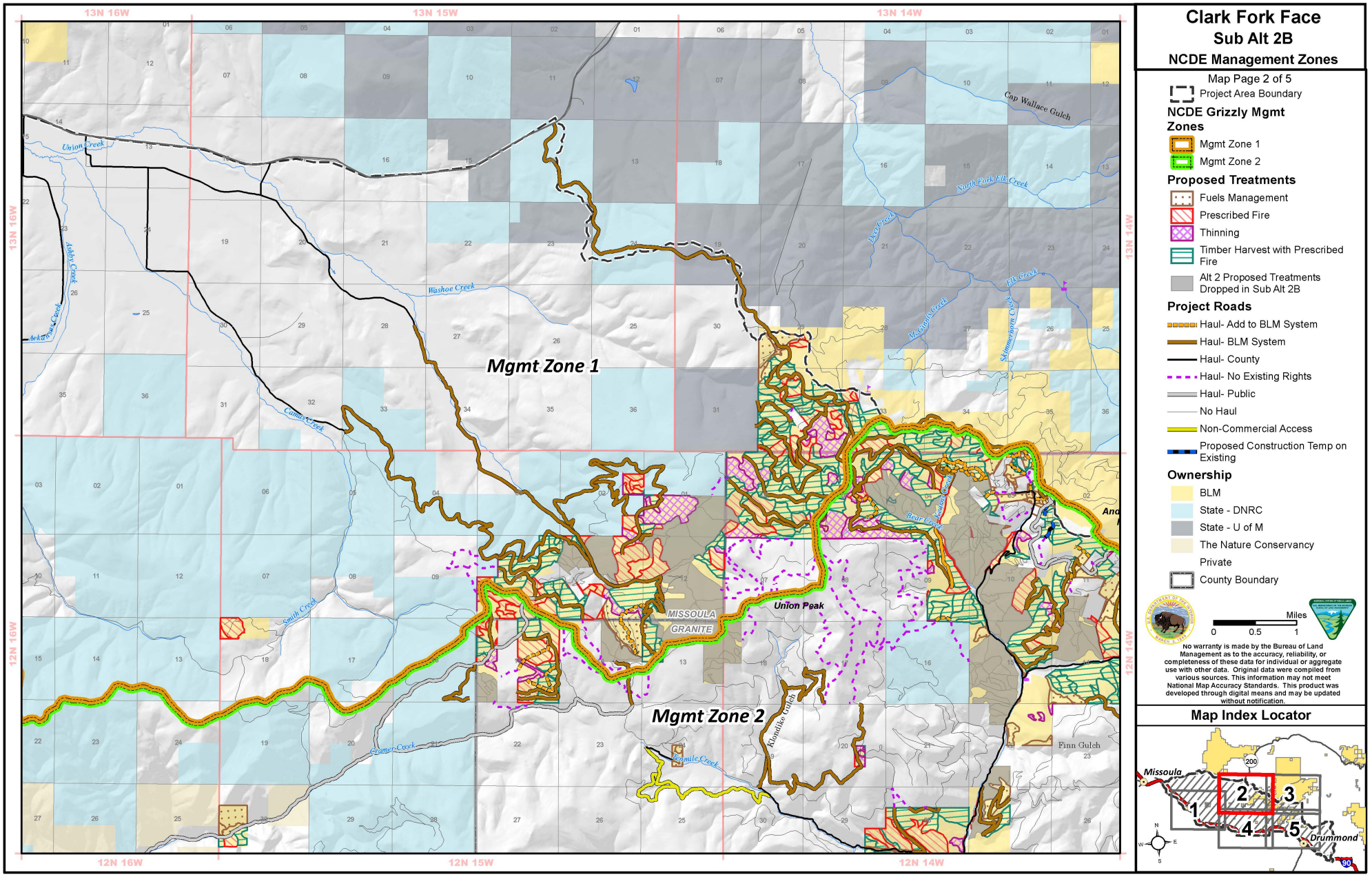
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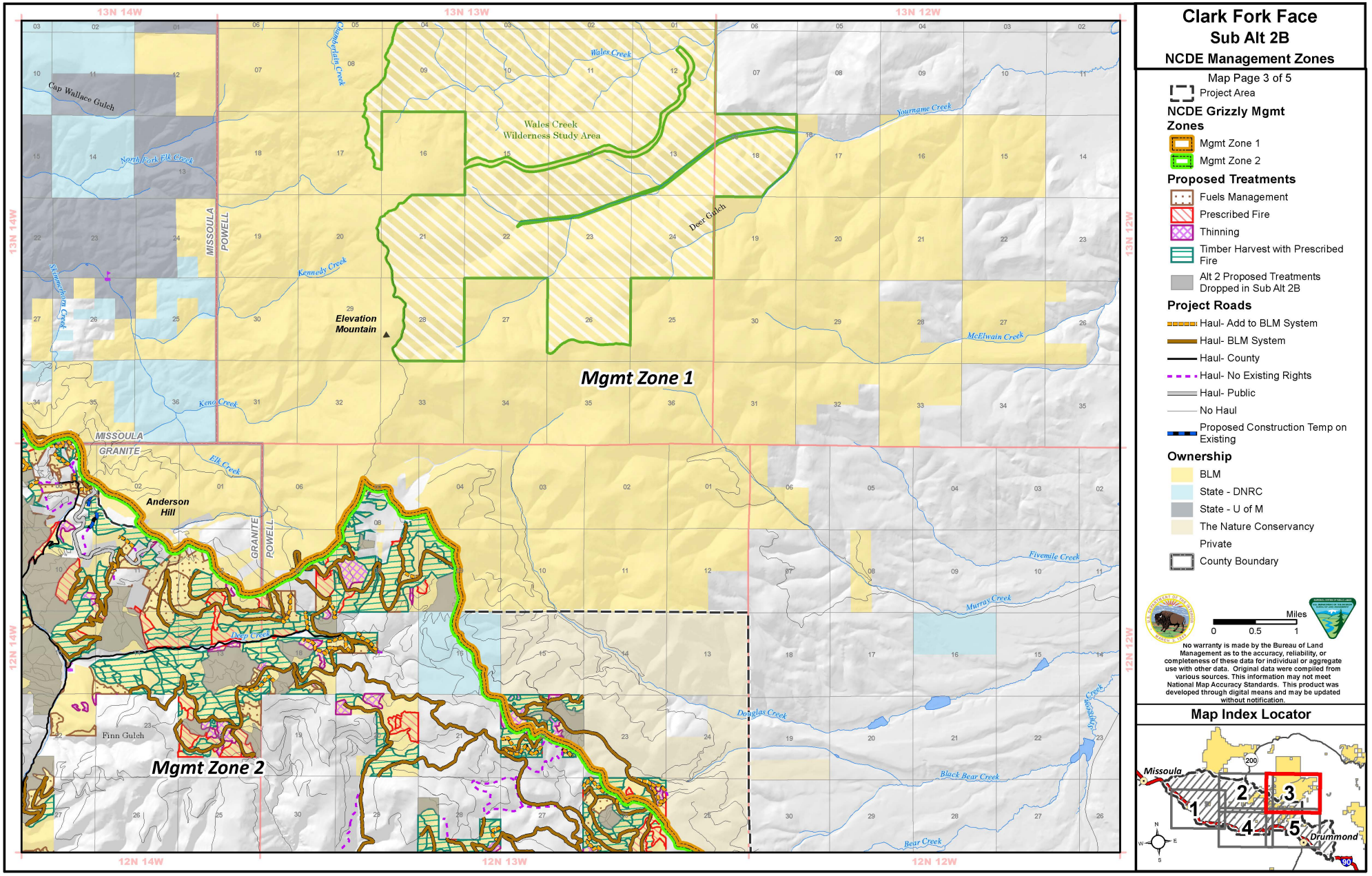
Map Index Locator

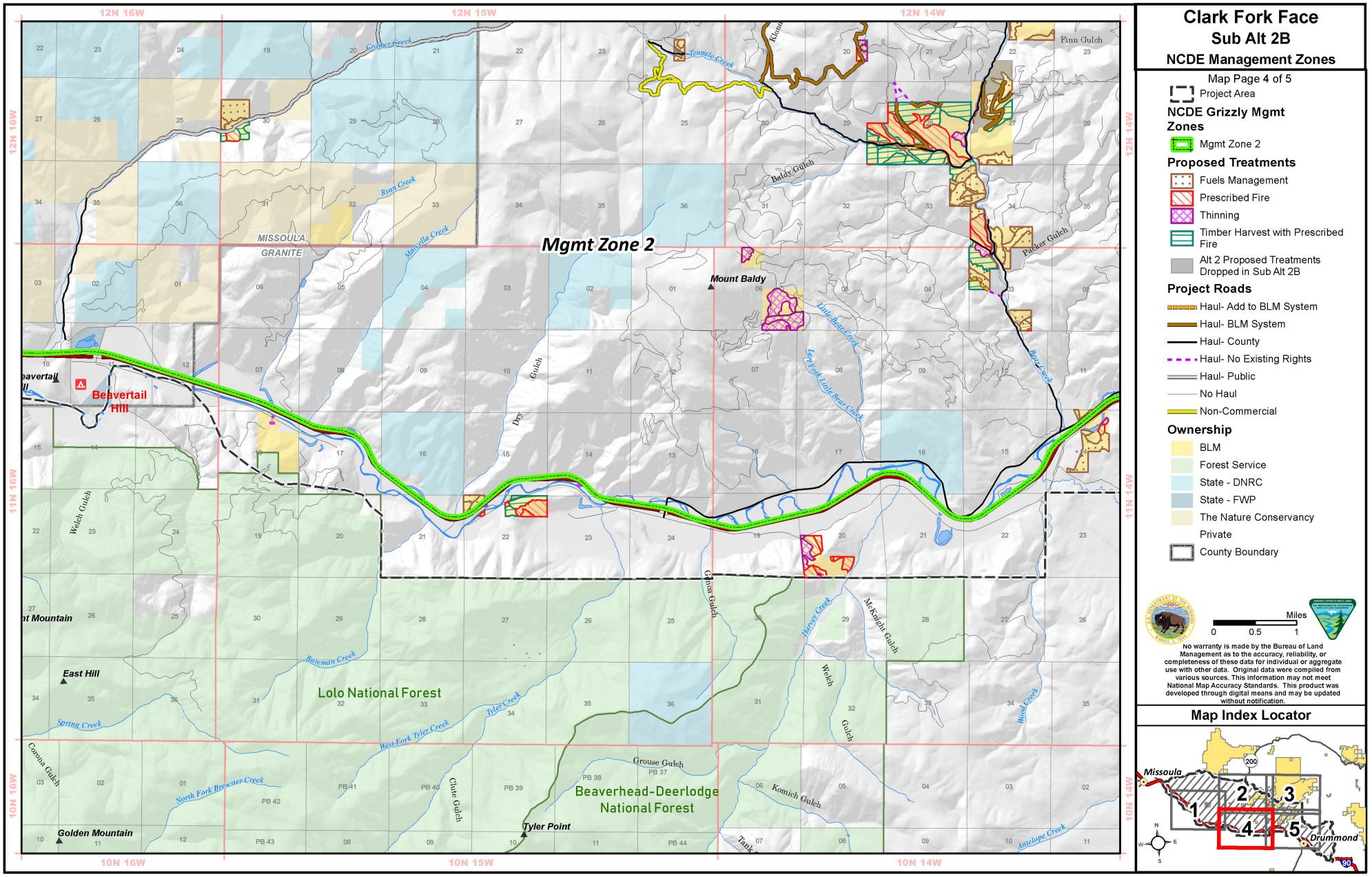

Clark Fork Face
NCDE Management Zones
Map Page 5 of 5
Legend
Project Area Boundary
NCDE Grizzly Mgmt Zones
Mgmt Zone 1
Mgmt Zone 2
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
Mgmt Zone 1
Mgmt Zone 2
King Mountain
Sturgeon Mountain
Drummond
Finn Gulch
Packer Gulch
Mulkey Gulch
Tie Gulch
Black Bear Creek
Bear Creek
Sturgeon Creek
GRANITE
POWELL
Lyon Gulch
Edwards Gulch
Morris Creek
Tich Creek
Wood Creek
Antelope Creek
12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W
10S 12W
N
S
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W
Miles
0
0.5
1
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Map Index Locator
Missoula
Drummond
1
2
3
4
5
200
90

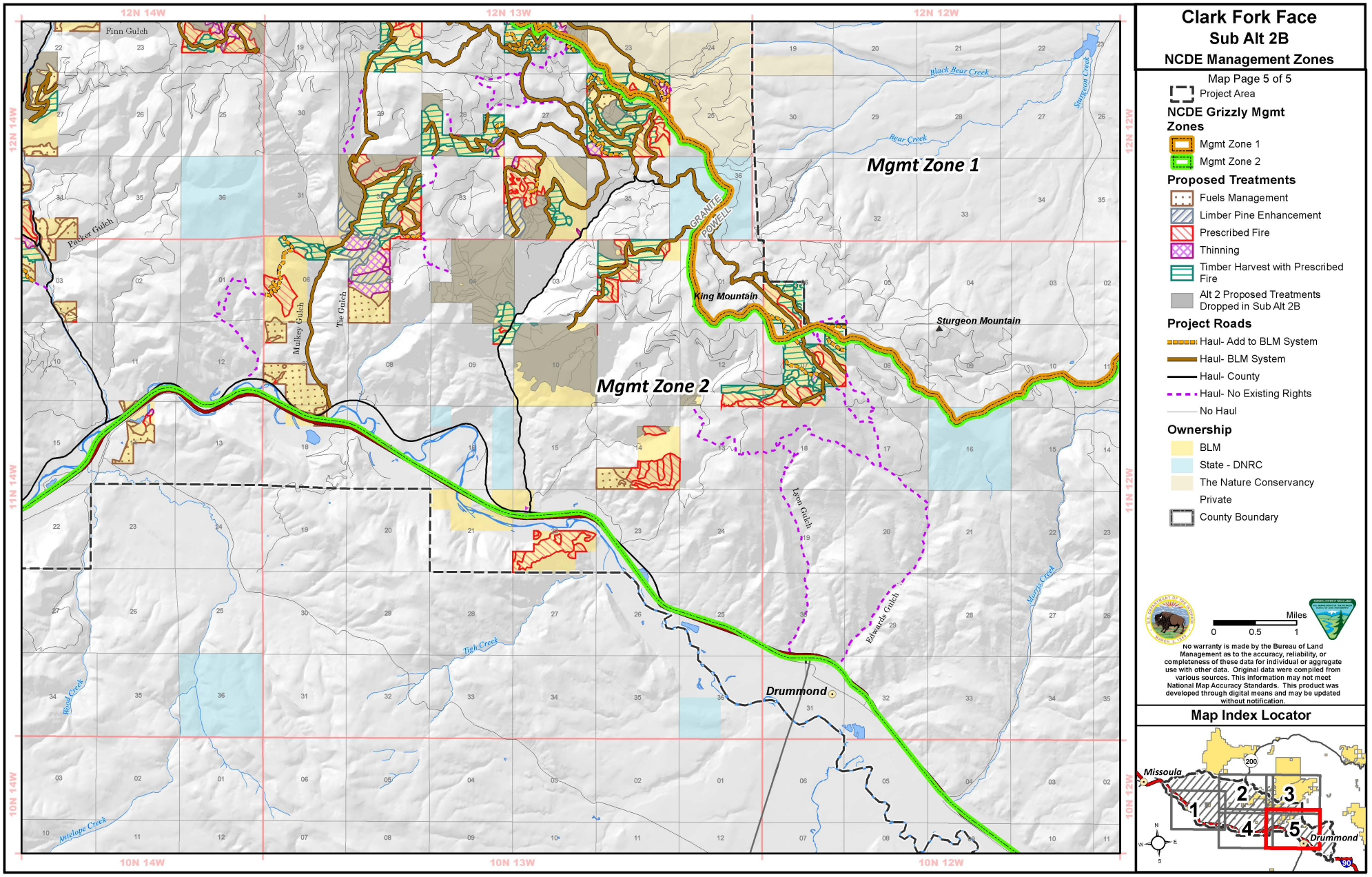
Sub alternative 2b with NCDE Management Zones maps (5 pages).



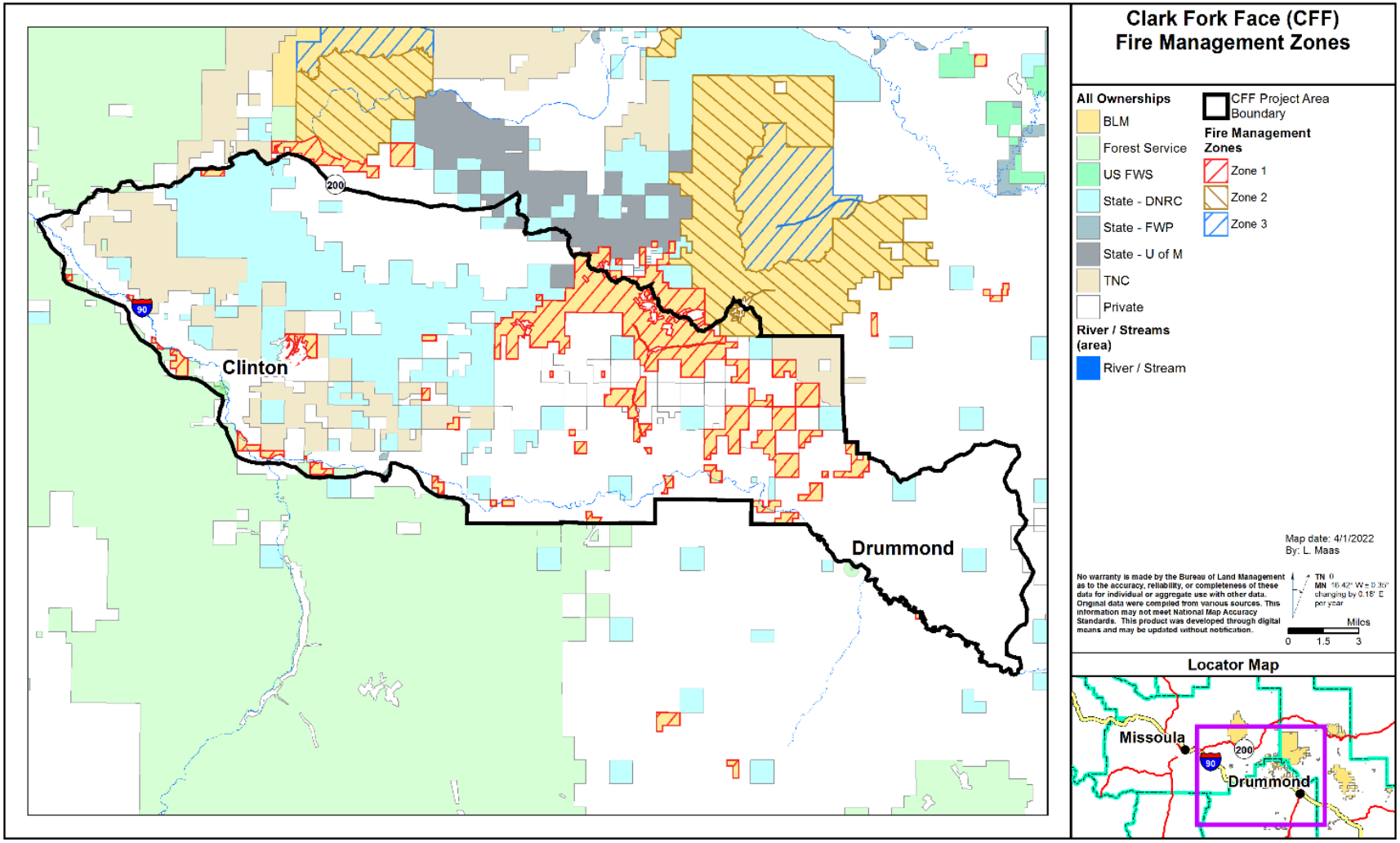

13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Mgmt Zone 1
Mgmt Zone 2
Union Peak
MISSOULA
GRANITE
Cap Wallace Gulch
Finn Gulch
Union Creek
Ashby Creek
Washoe Creek
North Fork Elk Creek
Elk Creek
McGinnis Creek
Clancy Creek
Smith Creek
Cramer Creek
Klondike Gulch
Jennie Creek
Clark Fork Face
Sub Alt 2B
NCDE Management Zones
Map Page 2 of 5
Project Area Boundary
NCDE Grizzly Mgmt Zones
Mgmt Zone 1
Mgmt Zone 2
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
Miles
0
0.5
1
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Map Index Locator
Missoula
Drummond
200
1
2
3
4
5
90


Clark Fork Face
Sub Alt 2B
NCDE Management Zones
Map Page 3 of 5
Project Area
NCDE Grizzly Mgmt Zones
Mgmt Zone 1
Mgmt Zone 2
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
Mgmt Zone 1
Mgmt Zone 2
Elevation Mountain
Anderson Hill
Wales Creek Wilderness Study Area
13N 14W
13N 13W
13N 12W
12N 14W
12N 13W
12N 12W

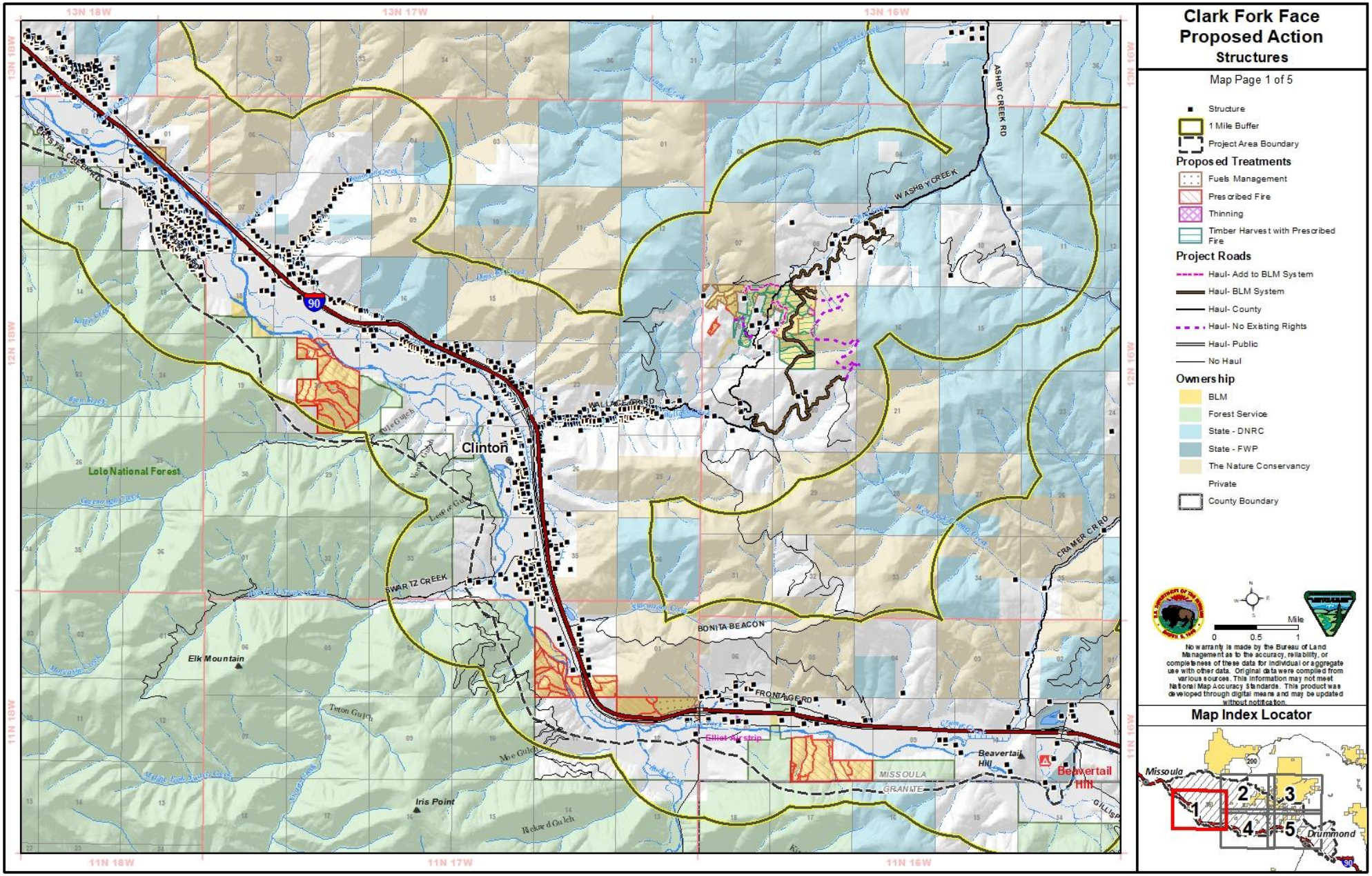

Clark Fork Face
Sub Alt 2B
NCDE Management Zones
Map Page 4 of 5
Project Area
NCDE Grizzly Mgmt Zones
Mgmt Zone 2
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial
Ownership
BLM
Forest Service
State - DNRC
State - FWP
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
Mgmt Zone 2
Beavertail Hill
Mount Baldy
Lolo National Forest
Beaverhead-Deerlodge National Forest
East Hill
Golden Mountain
Tyler Point
MISSOULA
GRANITE
12N 16W
12N 15W
12N 14W
11N 16W
11N 14W
10N 16W
10N 15W
10N 14W

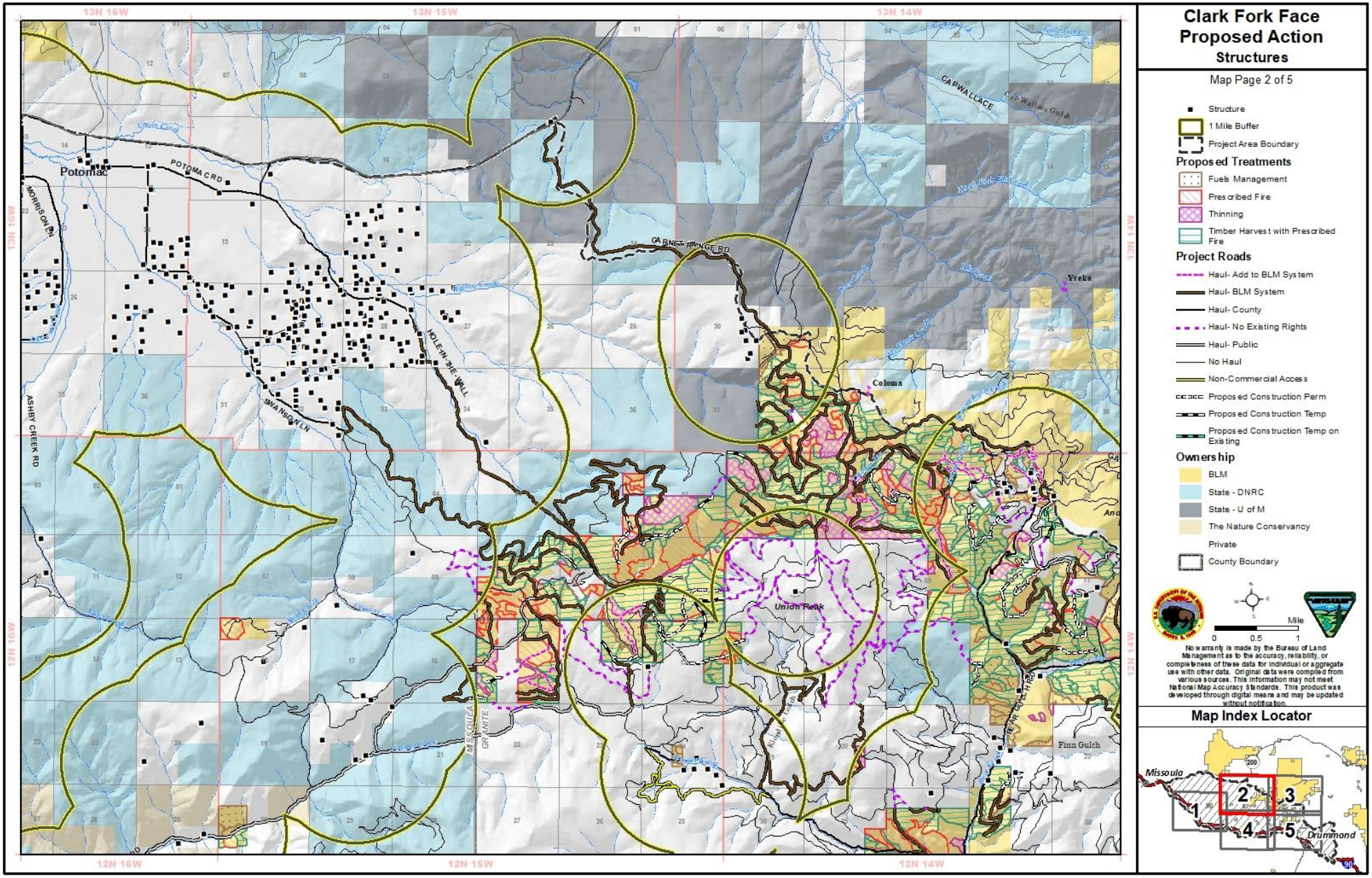

Clark Fork Face
Sub Alt 2B
NCDE Management Zones
Map Page 5 of 5
Project Area
NCDE Grizzly Mgmt Zones
Mgmt Zone 1
Mgmt Zone 2
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
No Haul
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
Miles
0 0.5 1
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Map Index Locator
Missoula
Drummond
Mgmt Zone 1
Mgmt Zone 2
King Mountain
Sturgeon Mountain
Drummond
Finn Gulch
Packer Gulch
Mulkey Gulch
Tin Gulch
Granite Powell
Black Bear Creek
Bear Creek
Sturgeon Creek
Lyon Gulch
Edwards Gulch
Morris Creek
Tigh Creek
Wood Creek
Antelope Creek
12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W

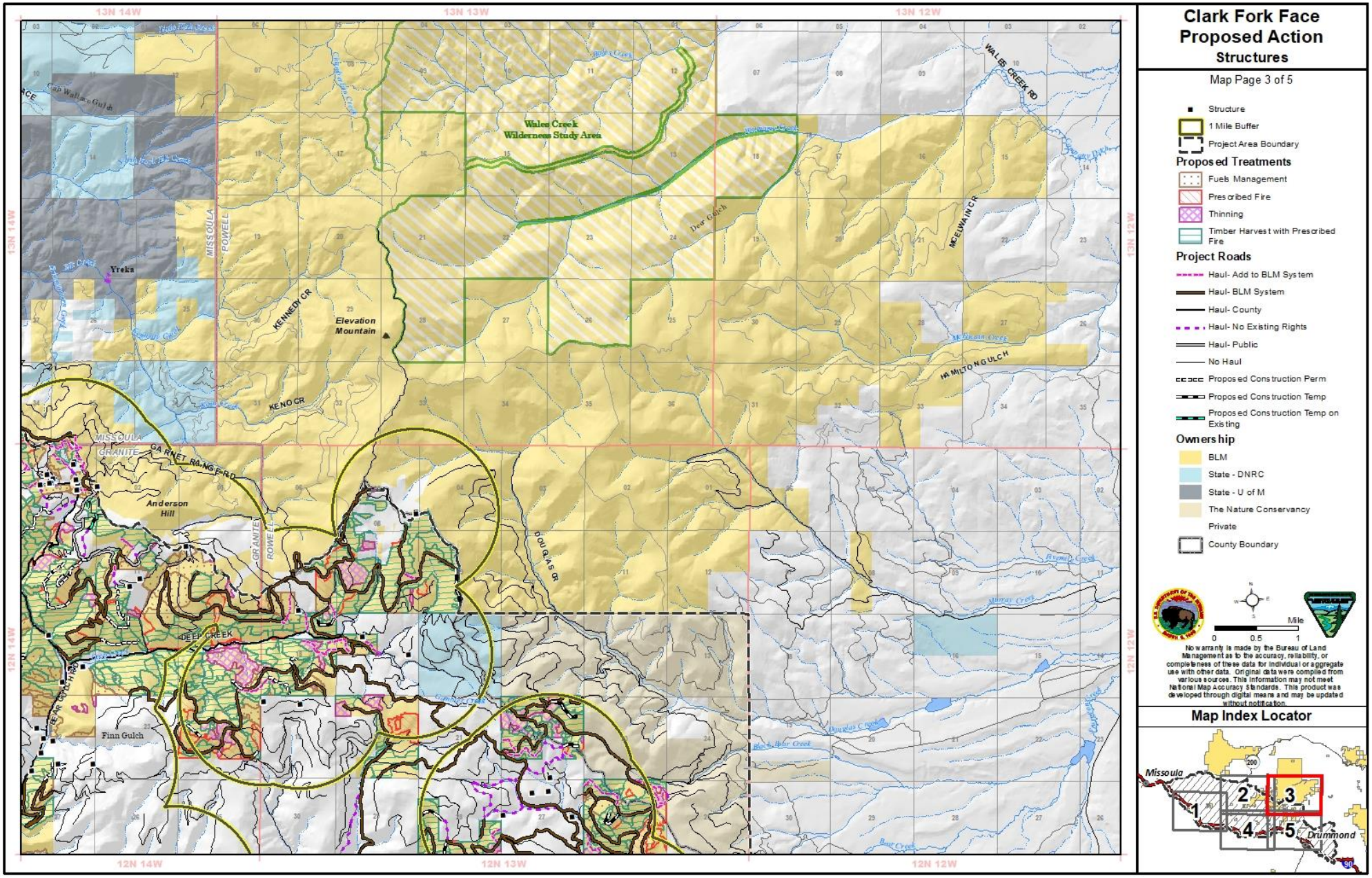
Fire Management Zones (FMZ) map (1 page).

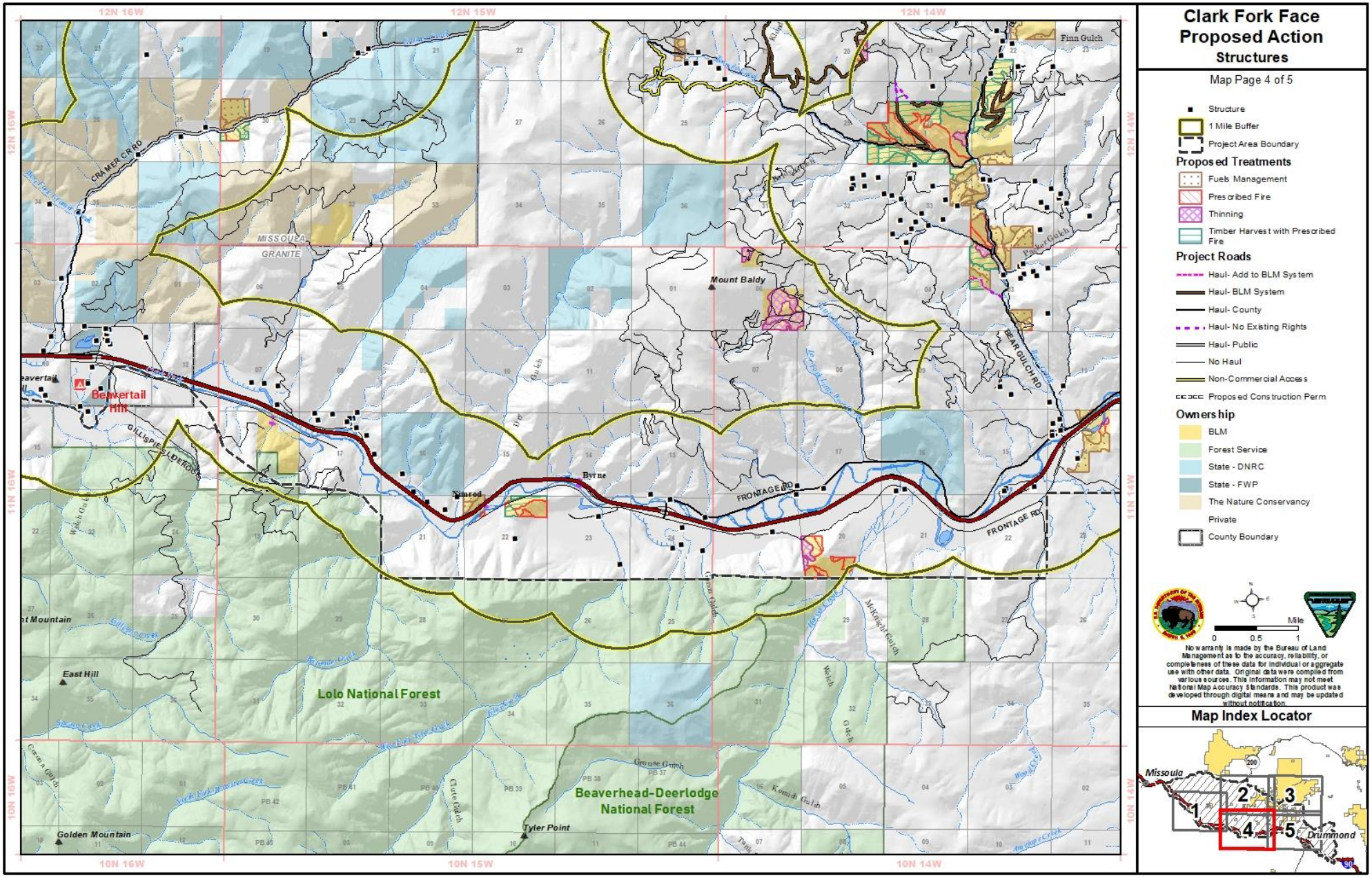


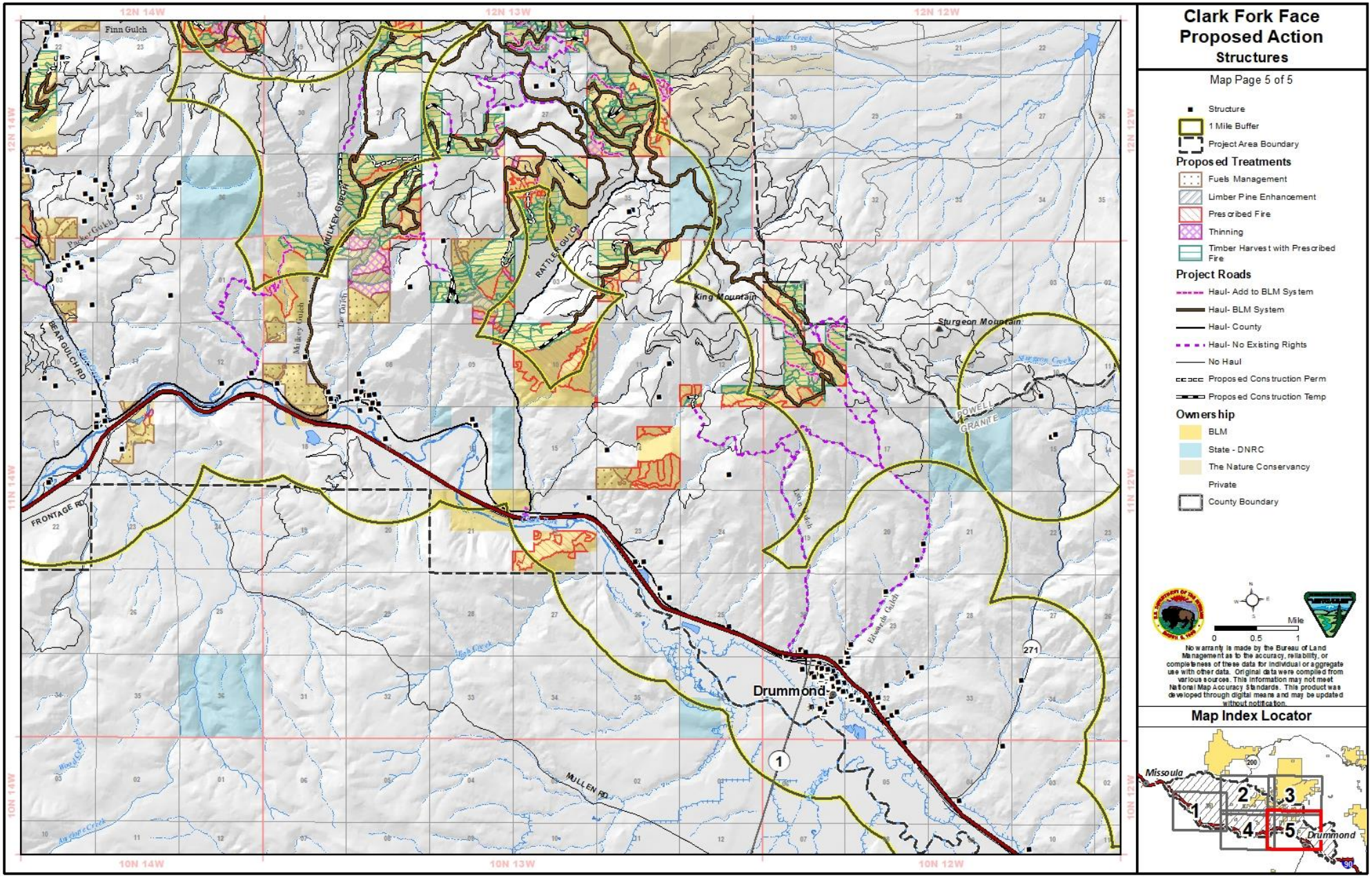
Alternative 2 Proposed Action with structures and 1 mile buffer maps (5 pages).



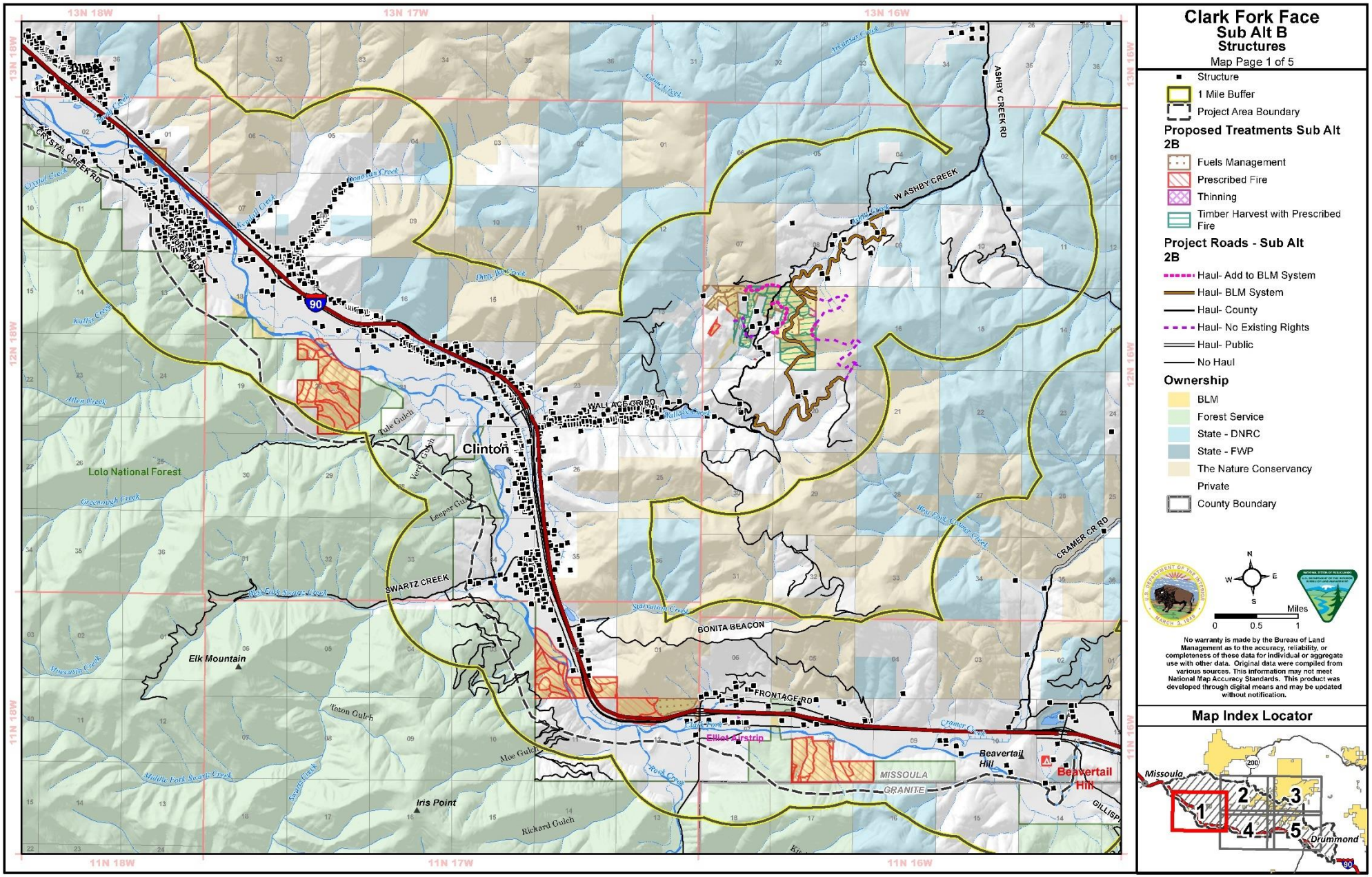

Clark Fork Face
Proposed Action
Structures
Map Page 2 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Perm
Proposed Construction Temp
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
Mile
0 0.5 1
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Map Index Locator
Missoula
Drummond
1
2
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4
5
13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Potomac
POTOMA CRD
MORRISON LN
ASHBY CREEK RD
SWANSON LN
HOLEIN THE WALL
GARNET RANGE RD
CAPWALLACE
Yreka
Coloma
Union Peak
Finn Gulch
MISSOULA GRANITE

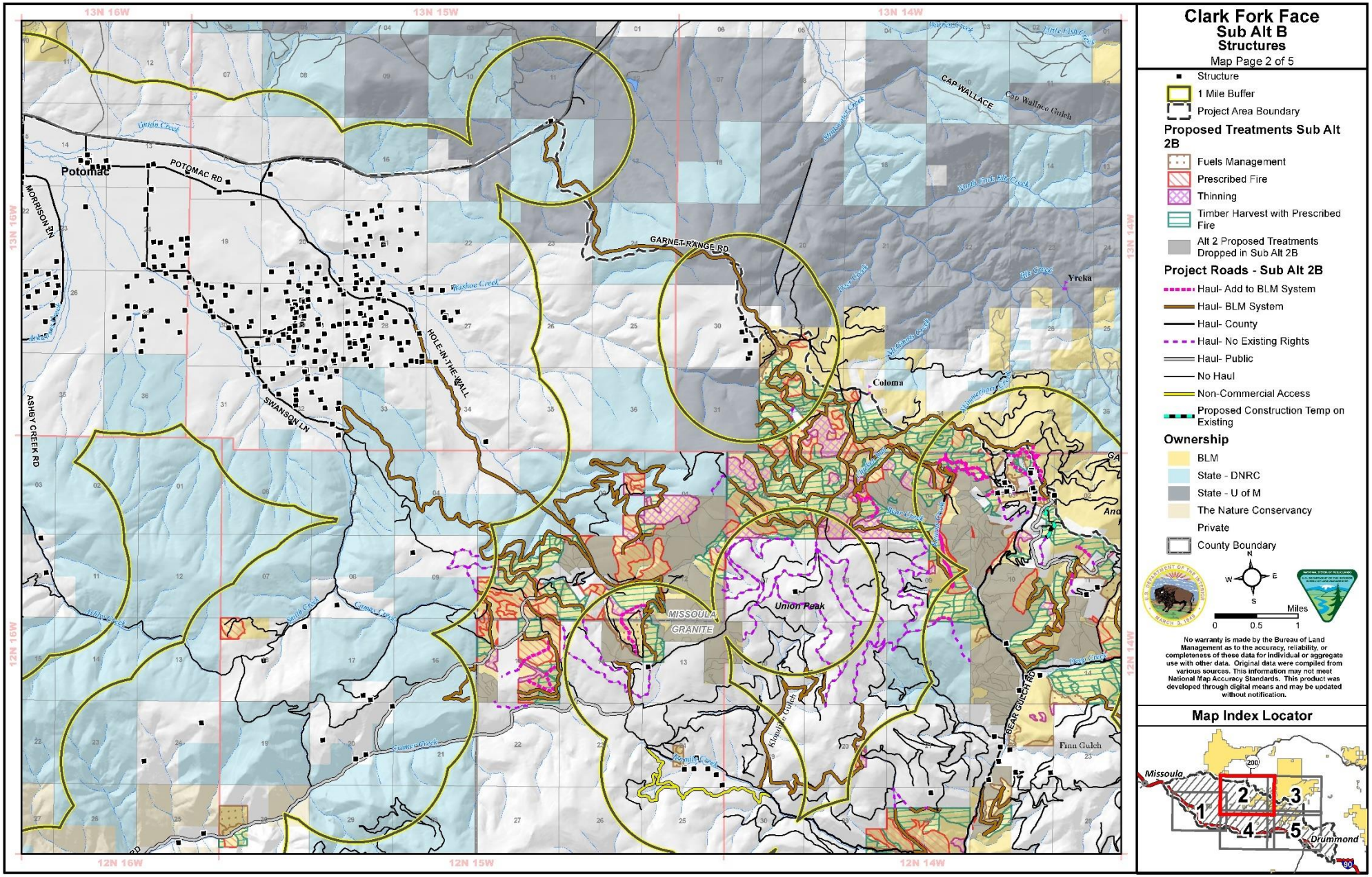

Clark Fork Face
Proposed Action
Structures
Map Page 3 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Proposed Construction Perm
Proposed Construction Temp
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
Mile
0 0.5 1
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Map Index Locator
Missoula
Drummond
Wales Creek Wilderness Study Area
Elevation Mountain
Anderson Hill
Finn Gulch
Yreka
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13N 13W
13N 12W
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12N 12W

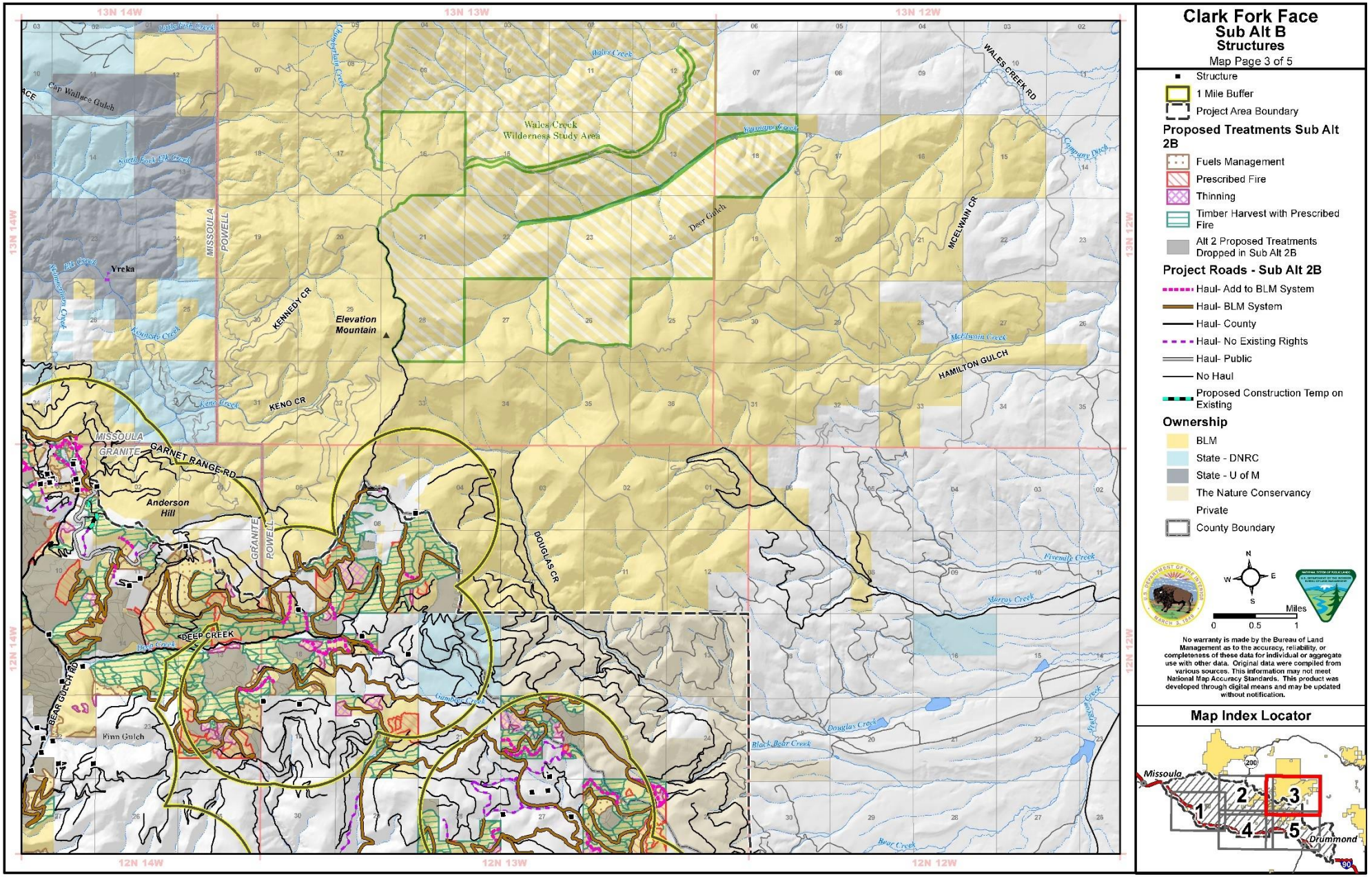

Clark Fork Face
Proposed Action
Structures
Map Page 4 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Perm
Ownership
BLM
Forest Service
State - DNRC
State - FWP
The Nature Conservancy
Private
County Boundary
Mile
0 0.5 1
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Map Index Locator
Missoula
Drummond
Beavertail Hill
Mount Baldy
Finn Gulch
Byrne
Ymrod
East Hill
Golden Mountain
Tyler Point
Lolo National Forest
Beaverhead-Deerlodge National Forest
FRONTAGE RD
BEAR GULCH RD
CRAMER CR RD
GILLISPIE SLIDE RD
MISSOULA
GRANITE
12N 16W
12N 15W
12N 14W
11N 16W
11N 14W
10N 16W
10N 15W
10N 14W

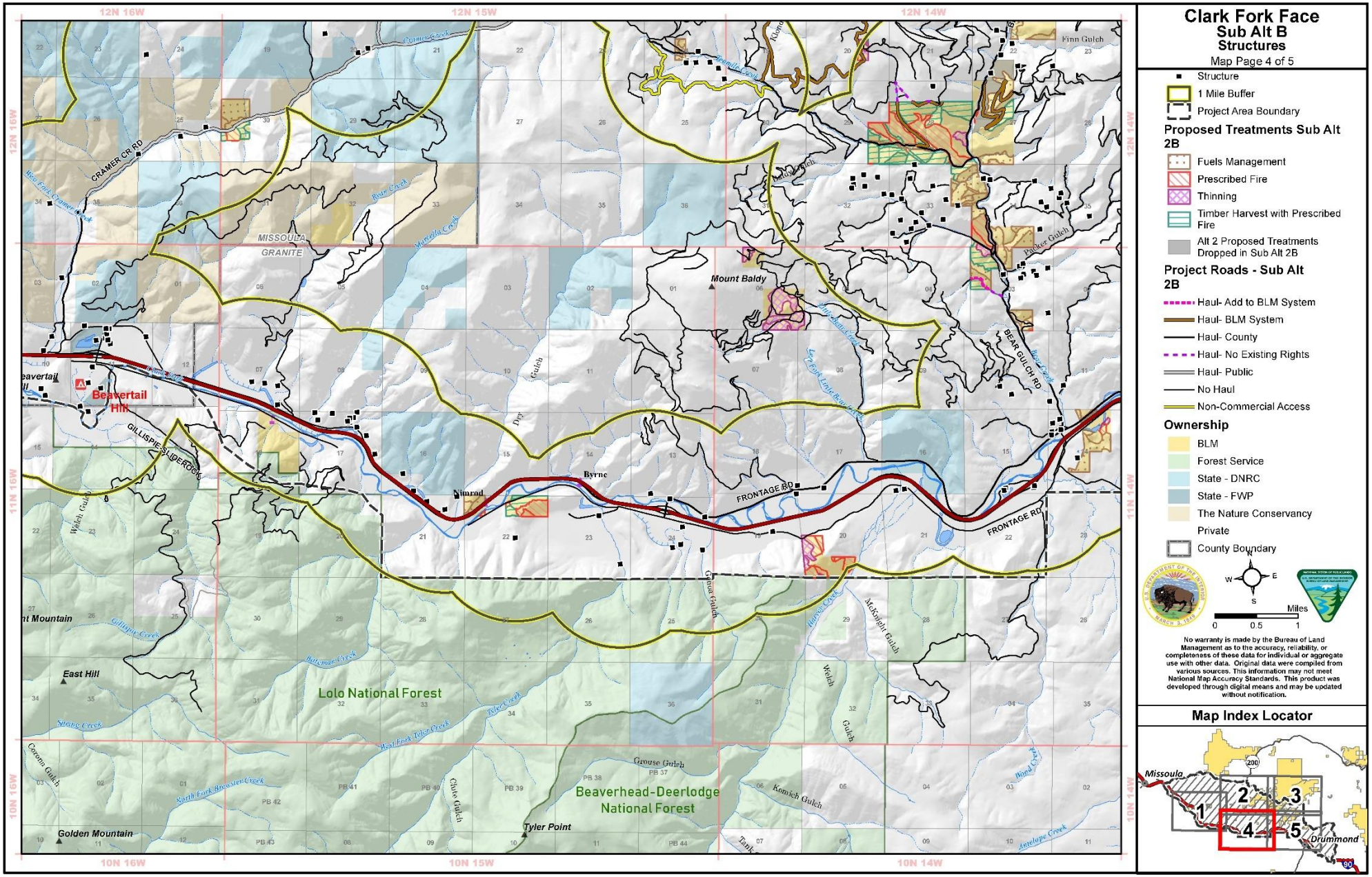

Clark Fork Face
Proposed Action
Structures
Map Page 5 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Project Roads
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
No Haul
Proposed Construction Perm
Proposed Construction Temp
Ownership
BLM
State - DNRC
The Nature Conservancy
Private
County Boundary
Mile
0 0.5 1
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Map Index Locator
Missoula
Drummond
Finn Gulch
Mullen Gulch
Rattler Gulch
King Mountain
Sturgeon Mountain
Bear Gulch Rd
Frontage Rd
Mullen Rd
Drummond
12N 14W
12N 13W
12N 12W
11N 14W
11N 12W
10N 14W
10N 13W
10N 12W

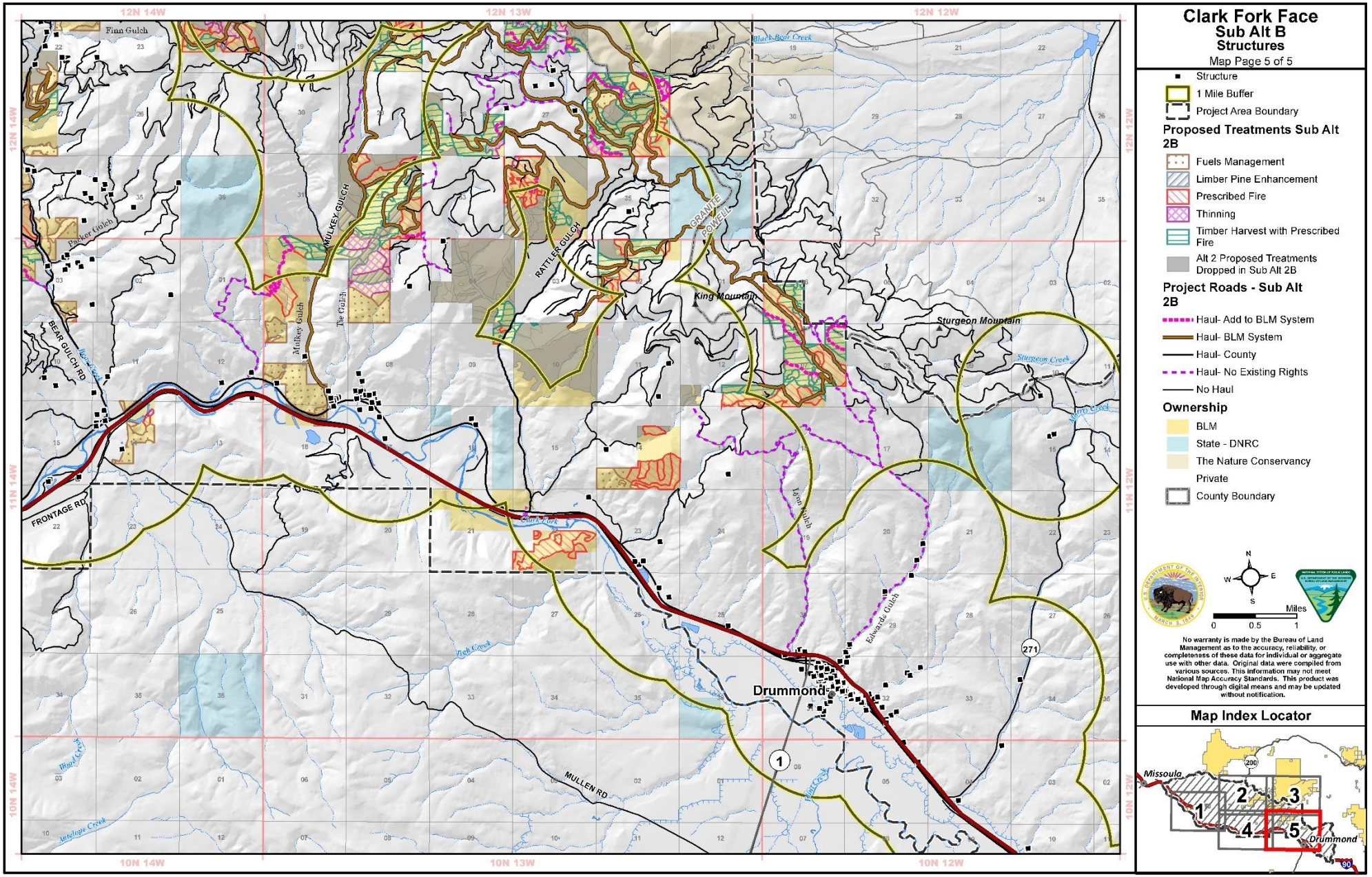
Sub alternative 2b with structures and 1 mile buffer maps (5 pages).



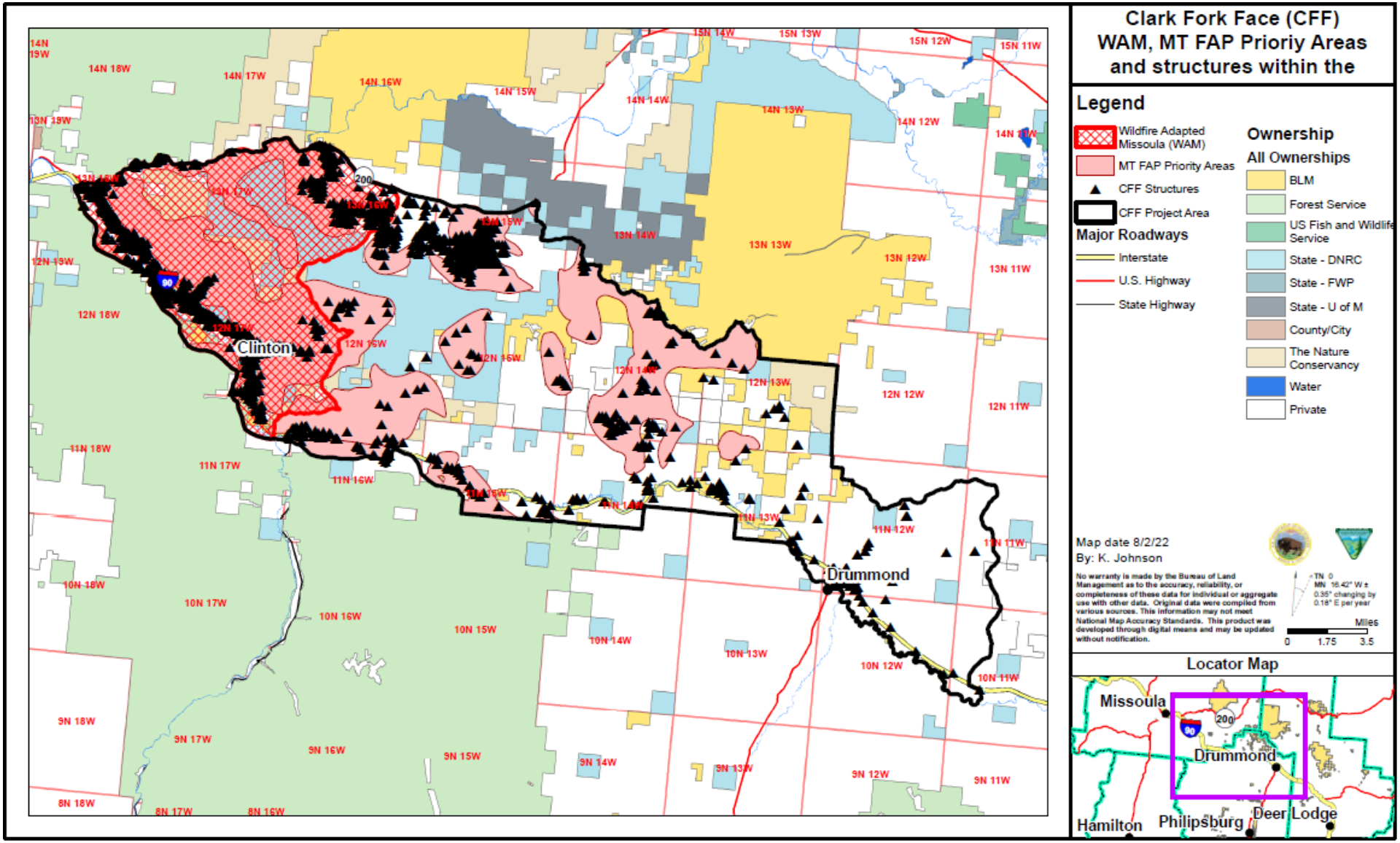

Clark Fork Face
Sub Alt B
Structures
Map Page 2 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments Sub Alt 2B
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads - Sub Alt 2B
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Non-Commercial Access
Proposed Construction Temp on Existing
Ownership
BLM
State - DNRC
State - U of M
The Nature Conservancy
Private
County Boundary
N
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Index Locator
Missoula
Drummond
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13N 16W
13N 15W
13N 14W
12N 16W
12N 15W
12N 14W
Potomac
POTOMAC RD
MORRISON LN
ASHBY CREEK RD
SWANSON LN
HOLE-IN-THE-WALL
GARNET RANGE RD
CAP WALLACE
Cap Wallace Gulch
Yreka
Coloma
MISSOULA
GRANITE
Union Peak
GEAR GULCH RD
Finn Gulch
Union Creek
Bushoe Creek
Bear Creek
Rock Creek
Deep Creek
Elk Creek
Little Fish Creek
Whitaker Creek
Ashby Creek
Swamp Creek
Rimini Creek
Klondike Gulch
Whitaker Fork
Middle Fork Rock Creek
North Fork Rock Creek


13N 14W
13N 13W
13N 12W
12N 14W
12N 13W
12N 12W
Clark Fork Face
Sub Alt B
Structures
Map Page 3 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments Sub Alt 2B
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads - Sub Alt 2B
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
Haul- Public
No Haul
Proposed Construction Temp on Existing
Ownership
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State - DNRC
State - U of M
The Nature Conservancy
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Index Locator
Missoula
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Wales Creek Wilderness Study Area
Elevation Mountain
Anderson Hill
Kinn Gulch
Yreka
MISSOULA
GRANITE
GARNET RANGE RD
POWELL
KENNEDY CR
KENO CR
DEEP CREEK
BEAR GULCH RD
DOUGLAS CR
HAMILTON GULCH
MCELWAIN CR
WALES CREEK RD
Cap Wallace Gulch
Deer Gulch
Douglas Creek
Black Bear Creek
Bear Creek
Fivemile Creek
Marrow Creek
Peterson Creek
Gumbo Creek
Company Ditch

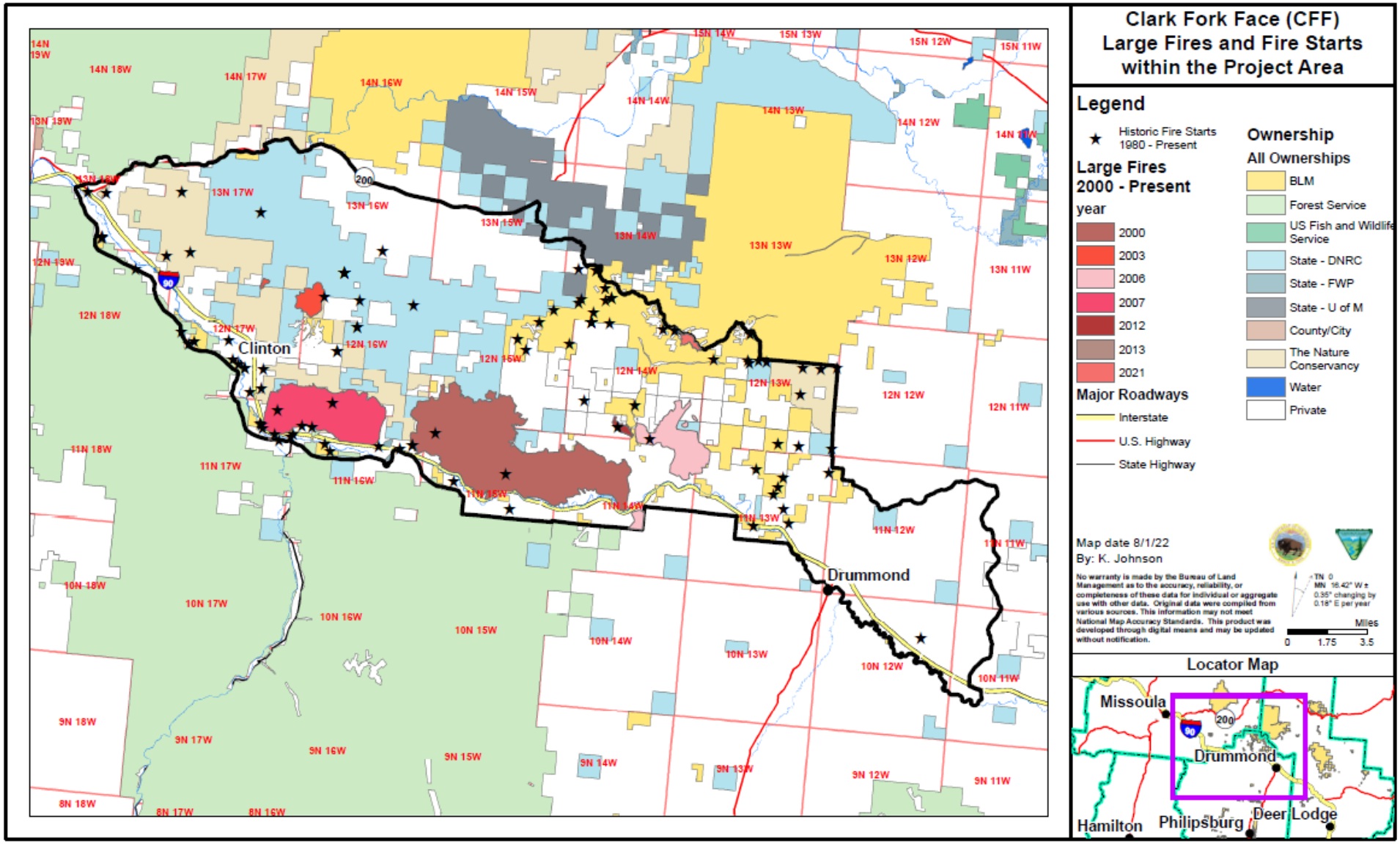

Clark Fork Face
Sub Alt B
Structures
Map Page 4 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments Sub Alt 2B
Fuels Management
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads - Sub Alt 2B
Haul- Add to BLM System
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Haul- County
Haul- No Existing Rights
Haul- Public
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Forest Service
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State - FWP
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Map Index Locator
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12N 15W
12N 14W
11N 16W
11N 14W
10N 16W
10N 15W
10N 14W
Beavertail Hill
GILLISPIE SLIDEROCK
CRAMER CR RD
FRONTAGE RD
BEAR GULCH RD
MISSOULA
GRANITE
Mount Baldy
Finn Gulch
Nimrod
Byrne
Lolo National Forest
Beaverhead-Deerlodge National Forest
East Hill
Golden Mountain
Tyler Point
Grouse Gulch
Komich Gulch
McKnight Gulch
Welch Gulch
Dry Gulch
Packer Gulch
Gillespie Creek
Butsemar Creek
Spring Creek
Riley Creek
West Fork Tyler Creek
North Fork Brewster Creek
Corona Gulch
Clute Gulch
Antelope Creek
Bond Creek
Howard Creek
Jacket Creek
Marcella Creek
Bear Creek
Cramer Creek
West Fork Cramer Creek
Roberts Creek
Hannibal Creek
Middle Fork Little Blackfoot River
Tank


Clark Fork Face
Sub Alt B
Structures
Map Page 5 of 5
Structure
1 Mile Buffer
Project Area Boundary
Proposed Treatments Sub Alt 2B
Fuels Management
Limber Pine Enhancement
Prescribed Fire
Thinning
Timber Harvest with Prescribed Fire
Alt 2 Proposed Treatments Dropped in Sub Alt 2B
Project Roads - Sub Alt 2B
Haul- Add to BLM System
Haul- BLM System
Haul- County
Haul- No Existing Rights
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State - DNRC
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Index Locator
Missoula
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12N 13W
12N 12W
10N 14W
10N 13W
10N 12W
Finn Gulch
Packer Gulch
MULKEY GULCH
Mulkey Gulch
The Gulch
RATTLER GULCH
GRANITE
POWELL
King Mountain
Sturgeon Mountain
Sturgeon Creek
BEAR GULCH RD
FRONTAGE RD
Clark Fork
Edwards Gulch
Tarvan Gulch
Rich Creek
Ward Creek
Antelope Creek
MULLEN RD
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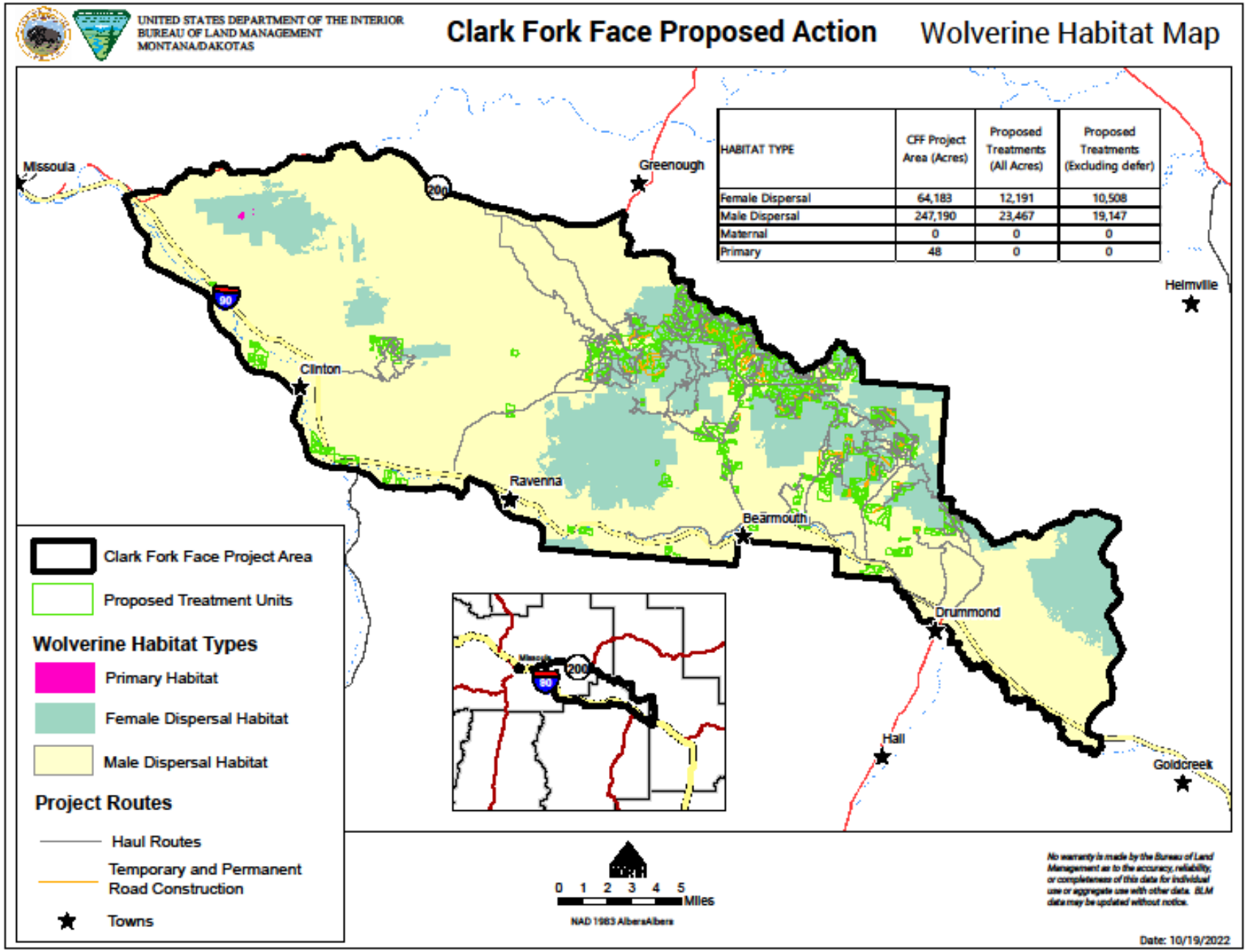
Wildfire Adapted Missoula (WAM), Montana Forest Action Plan (MT FAP) Priority Areas with Structures Map (1 page).



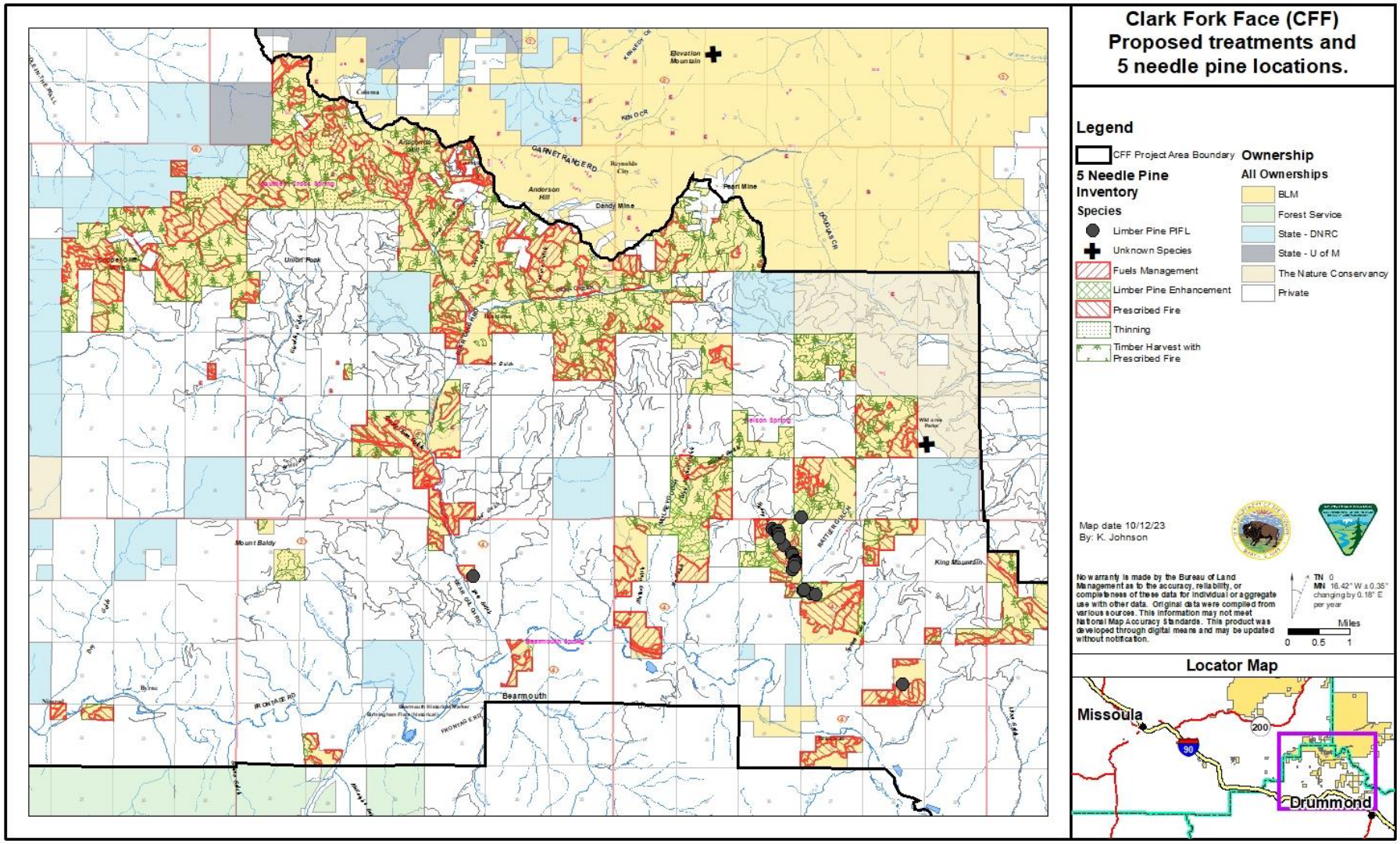
Large Fires and Fire Starts Map.



Wolverine habitat and Clark Fork Face Proposed Action map (1 page).



CFF Proposed Action (Alternative 2) with 5 needle pine locations.



10 Appendix E: Representative Images.



Figure 1: Limber pine (*Pinus Flexilus)* within the CFF planning area exhibiting damage from white pine blister rust. This stand is proposed for Limber Pine Enhancement Treatment. Photo by K. Johnson 2018.



Figure 2: Stand #2054 of the CFF planning area exhibiting a densely stocked, single storied stand condition. This stand is proposed for Timber Harvest with Prescribed Burn treatment and is within HTG-2. BLM photo 2014.



Figure 3: Stand 1235 of the CFF planning area exhibiting a densely stocked, single storied stand condition. This stand is proposed for Timber Harvest with Prescribed Burn treatment and is within HTG-1. BLM photo 2014.



Figure 4: Stand 1521 of the CFF planning area exhibiting a densely stocked, multi storied stand condition, heavily impacted by Western spruce budworm. This stand is proposed for Timber Harvest with Prescribed Burn treatment and is within HTG-1. BLM photo 2014.



Figure 5: Stand 1548 of the CFF planning area exhibiting a densely stocked, small diameter stand condition. This stand is proposed for Thinning treatment and is within HTG-1. BLM photo 2014.



Figure 6: Stand 1556 of the CFF planning area exhibiting a well-stocked large diameter stand condition. This stand is proposed for Prescribed Burning treatment and is within HTG-1. BLM photo 2014.



Figure 7: Stand 1739 of the CFF planning area. No immediate treatment need was identified d for this stand within HTG-1.



Figure 8: Stand 1189 of the CFF planning area. Fuels Management treatment is proposed for this stand is which is within the WUI and HTG-2.



Figure 9: Stand 662 of the CFF planning area exhibiting a densely stocked, small diameter stand condition, with Western spruce budworm damage (defoliation). This stand is proposed for Thinning treatment and is within HTG-4. BLM photo 2014.



Figure 10: Stand 1156 of the CFF planning area exhibiting a single storied stand with noticeable MPB induced mortality. This stand is proposed for Timber Harvest with Prescribed Burn treatment and is within HTG-6. BLM photo 2014.



Figure 11: A completed Fuels Management Treatment consisting of thinning and chipping. BLM Photo.



Figure 12: Completed commercial thinning in ponderosa pine stand (HTG-1 – HGT-3). BLM Photo.



Figure 13: Completed Single Tree Selection in ponderosa pine stand (HTG-1 – HGT-3). BLM Photo.



Figure 14: Completed regeneration harvest, salvage / sanitation in LP-WL stand (HTG-4 – HTG-6). BLM Photo.



Figure 15: Completed group selection harvest in WL-DF stand (HTG-1 - HTG-3). BLM Photo.



Figure 17: Completed salvage utilizing winter conditions to protect a sensitive site. BLM Photo.



Figure 18: Controlled burn in PP- WL stand. BLM Photo.



Figure 19: Controlled burn on sparsely forested or non-forested site. BLM Photo.



Figure 150: Adaptive Complexity Thinning (ACT) in WL stand. BLM Photo.



Figure 21: Variable Density Thinning (VDT) in ponderosa pine stand. BLM Photo.



Figure 22: Fully obliterated temporary road. BLM Photo.

11 Appendix F: Design Features for Proposed Action

The following design features would be used to design and implement the Proposed Action. Design features are developed to mitigate or avoid potential adverse impacts. Some features are required by law, regulation, or policy.

If, during project layout or implementation, the BLM determines that one or more design features should be modified to address a site-specific condition, the modification will conform to the extent of environmental effect(s) described in this assessment. If modification to a design feature were expected to exceed the effects discussed in this EA, a new EA would be prepared and circulated for public review and comment.

Soil

1. During the layout phase, all proposed treatment areas would be evaluated for presence of biological crusts prior to implementation. This would be accomplished by identifying likely areas through soil mapping and satellite / aerial imagery as well as field reconnaissance. If and when found, biological soil crusts will be protected through exclusion from mechanical and manual treatment areas.
2. Low intensity prescribed fire may burn into areas with biological soil crusts, but direct ignitions in these features should be avoided.
3. Areas with proposed road construction that intersect with geologically unstable soils will be rerouted, modified and or shortened to avoid impacting the unstable sites. Proposed road locations would be determined in coordination with soil scientist / hydrologist and geologist.
4. Follow project design features and best management practices, as identified in the Missoula RMP (USDI-BLM 2021), Appendix P:
    a. DF-33. Implement these measures at project-level planning and through stipulations in leases, permits, and other authorizations.
    b. DF-34. Revegetate disturbed soils to stabilize and reduce the introduction or spread of invasive or noxious weed species.
    c. DF-35. Provide for conservation and protection of soil and vegetation during periods of drought.
    d. DF-36. Consider the intensity of the disturbance for activities proposed on unstable slopes or soils.
    e. DF-37. Evaluate hazard and risk and apply special BMPs or design features to avoid or lessen hazard and risk. To minimize and reduce potential soil erosion, and to provide for soil stability.
    f. DF-38. Apply seasonal or other criteria-based restrictions on activities authorized by BLM in areas with higher soil compaction or erosion hazards.

Soil and Organic Matter

1. Where warm and dry ecological sites are lacking in woody material (less than 2 tons/acre), large woody debris, (defined as tree boles >8 inches and > 6 feet long) will be left to achieve 2-5 tons/acre.
2. Follow project design features and best management practices, as identified in the

Missoula RMP (USDI-BLM 2021), Appendix P:

a. DF-29. Scatter fine materials not utilized (seedlings, saplings, tops, branches, cull logs, and some down woody material) on the forest floor where and when it would not contribute to fire hazard in order to maintain nutrient cycling, provide for wildlife features, and discourage cross-country motorized travel.

Riparian and Water Quality

1. Riparian Conservation Areas (RCAs) for all lotic and lentic features were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess site specific Riparian Conservation Area (RCA) widths to protect streams and wetlands. These site-specific RCAs and RMOs are listed in section 1.5.
2. During layout, crews would review the RCA buffer widths per stream to assure that RMOs are met in coordination with Missoula BLM Hydrologist / Soil Scientist.
3. Missoula RMP (USDI-BLM 2021), Appendix P:
    a. DF-14. Management actions within Riparian Conservation Areas will not retard or prevent attainment of RMOs.
    b. DF-22. Avoid side-casting of road surface material into areas where it may reach RHCAs.
    c. DF-23. Apply silvicultural practices in RHCAs to acquire desired vegetation characteristics where needed to attain RMOs. Apply practices in a way that does not retard attainment of RMOs and avoids adverse effects to native fish. (TM1b)
    d. DF-24. Design prescribed burns to contribute to the attainment of RMOs. (FM-4) DF-24. \ Avoid placing wildland fire operations within the RHCAs to the extent practicable. Exceptions may be granted following a review and recommendation by a resource advisor, and the line officer will prescribe the location, use conditions, and rehabilitation requirements with avoidance of adverse effects to native fish and sensitive aquatic species as a primary goal. (FM1, FM-2).

Riparian

3. Follow project design features and best management practices, as identified in the Missoula RMP (USDI-BLM 2021), Appendix P:
    a. DF-24. Design prescribed burns to contribute to the attainment of RMOs. (FM-4) Avoid placing wildland fire operations within the RHCAs to the extent practicable. Exceptions may be granted following a review and recommendation by a resource advisor, and the line officer will prescribe the location, use conditions, and rehabilitation requirements with avoidance of adverse effects to native fish and sensitive aquatic species as a primary goal. (FM1, FM-2).
4. The Missoula RMP (USDI-BLM 2021), Appendix P provides the standard project design features for road building including proposed permanent and temporary roads:
    a. DF-21. Avoid locating new roads or road-related facilities in RCAs. Exceptions may be granted upon watershed or site-specific analysis focused on how road design features would minimize or avoid adverse effects to aquatic and riparian resources at site-specific, reach, and watershed scales.
    b. DF-22. Avoid side-casting of road surface material into areas where it may reach RHCAs.

c. DF-34. Revegetate disturbed soils to stabilize and reduce the introduction or spread of invasive or noxious weed species.
d. DF-36. Consider the intensity of the disturbance for activities proposed on unstable slopes or soils.

1. Proposed permanent and temporary roads would be designed to meet Montana Best Management Practices for forested roads (MT-DNRC 2015).
2. Temporary roads would be rehabilitated immediately following completion of proposed project activities with the following road closure mitigations:
    a. During new construction, topsoil and slash would be stored adjacent to the temporary road to the greatest extent possible and pulled back over the road surface during decommissioning.
    b. Installed culverts would be removed and stream crossings would be repaired to simulate undisturbed conditions from an appropriate reference reach. These treatments could include grade control structures, removal of road fill materials, and slash filter windrows. During project implementation, site specific stream crossing standards would be developed for road closures.
    c. The temporary road surface would have site preparation to a depth of at least 6 inches. Site preparation may include full recontouring on steep roads or scarification on flat road conditions.
    d. Road prisms would be seeded using a BLM approved native seed mix.
    e. Slash of mixed sizes (at least 50% <6 inches diameter) would be placed over temporary roads and excaline trails to prevent erosion in units. Slash would cover approximately 65−70% of the road or trail to a depth of approximately 2−3 inches where available (approximately 10-15 t/a).
3. Landing locations within designated RCA buffers (see section 1.5 tables 3 and 4) should be avoided; if needed a site specific variance may be authorized by project hydrologist along with a site specific rehabilitation plan for designated lands. Where needed, logging slash should be decked on the uphill side of the road prism or on the road prism when placed within a RCA.

Cultural / Archeological

1. Through the terms of the Programmatic Agreement with SHPO it has been determined that a phased identification and evaluation of historic properties, determinations of effect, mitigations and consultation will be carried out after issuance of the FONSI and DR, but prior to authorizing the implementation.
2. All affected areas (including treatment areas and roads) would have Class III Inventory conducted prior to project implementation.
3. Historic properties would be avoided during implementation either through project layout, monitoring, timing or similar.
4. Consider requiring winter-only harvest or removal of acres from implementation based on results of survey.

Special Status Plants

1. Likely habitats would be surveyed prior to implementation for Special Status Plants:

keeled bladderpod and Howell's gumweed.
2. SS Plant populations would be avoided where possible during implementation either through project monitors, flagging avoidance areas, or treatment area modification.
3. Consider timing restrictions when appropriate, i.e., targeting implementation during times of plant dormancy.
4. For Howell's gumweed, collect seeds and replant after implementation where possible.
5. During noxious weed control, avoid spraying herbicide on SS plants. Consider biocontrol methods for noxious weed control where SS plants exist.
6. Review BLM Special Status Species Management, Manual 6840 (USDI-BLM 2008).

Solid mineral development

1. At the time of implementation, identify existing solid mineral operations for avoidance/coordination.
2. If there are areas of moderate-high development potential with active mineral projects in the vicinity, vegetation treatment types could be adjusted to improve/increase mineral development.

Abandoned mine lands

1. During layout and reconnaissance, field crews would coordinate with the MiFO geologist and use AMSCM and local AML.gdb (GIS data) to identify areas of avoidance; or change of treatment type to reduce people on the ground.

Visual characteristics

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P:
    a. DF-43. Design forest management activities in undeveloped and developed recreation areas to maintain or improve visual qualities.
2. In VRM Class IV -Every attempt should be made to minimize impact of activities through careful location, minimal disturbance and repeating the basic elements of form, line, color and texture found in the predominant landscape (i.e. roads should follow the landform and blend in as much as possible).
3. During layout and reconnaissance field crews would coordinate with the MiFO VRM program manager to assure VRM Class IV requirements are met and visual impacts are appropriately addressed or mitigated.

Recreational Traffic

1. Consider a reader board for the bottom of Garnet Range Road (GRR) during active hauling.
2. Log hauling restrictions on the GRR will be evaluated and implemented on a case-by-case basis.
3. Written authorization by the BLM must be granted prior to log hauling on the GRR during weekends or between 11 AM – 4 PM on weekdays during peak summer recreation season (generally Memorial Day – Labor Day).
4. Alternate haul routes may be utilized to avoid log hauling on the GRR. Alternate haul routes will be evaluated by the BLM on a case-by-case basis. Written authorization by the BLM must be granted prior to use of alternate haul routes.

The National Winter Recreation Trail/Garnet Winter Backcountry Byway

1. Written authorization by the BLM must be granted prior to plowing of the GRR, Dec. 15 - March 15 of any given year. Requests to plow the GRR during this period will be evaluated on a case-by-case basis.
2. Written authorization by the BLM must be granted prior to wheeled vehicle operation on the GRR, Jan. 1 – March 15 of any given year. Requests to operate wheeled vehicles on the GRR during this period will be evaluated on a case-by-case basis.
3. From March 15 – Dec. 15 of any given year, contract purchasers / awardees or subcontractors may plow the full width of the GRR including turnouts, unless otherwise suspended during periods of high soil moisture, runoff, or heavy rainfall.
4. During the GRR established season of closure (Jan 1 – April 30), all gates must remain closed except when vehicles are physically pass through them.
5. Written authorization by the BLM must be granted prior to weekend hauling on the GRR during the summer season from May 1 through October 15.
6. Alternate haul routes may be utilized to avoid log hauling on the GRR. Alternate haul routes will be evaluated by the BLM on a case-by-case basis. Written authorization by the BLM must be granted prior to use of alternate haul routes.

Fisheries habitat including SSS species and designated critical habitat.

1. Follow Best Management Practices for Forestry in Montana, as revised (Montana DNRC, 2015).
2. Follow the Missoula RMP (USDI-BLM 2021), Appendix B: Aquatic and riparian habitat conservation strategy.
3. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-20, DF-21, DF-23, DF-24:
    a. DF-20 Provide and maintain fish passage at new, replacement, and reconstructed road crossings of existing and potential fish-bearing streams, unless barriers are determined beneficial for native fish and /or sensitive aquatic species conservation.
    b. DF-21. Avoid locating new roads or road-related facilities in RCAs. Exceptions may be granted upon watershed or site-specific analysis focused on how road design features would minimize or avoid adverse effects to aquatic and riparian resources at site-specific, reach, and watershed scales.
    c. DF-23. Apply silvicultural practices in RHCAs to acquire desired vegetation characteristics where needed to attain RMOs. Apply practices in a way that does not retard attainment of RMOs and avoids adverse effects to native fish. (TM1b)
    d. DF-24. Design prescribed burns to contribute to the attainment of RMOs. (FM-4) DF-24. \Avoid placing wildland fire operations within the RHCAs to the extent practicable. Exceptions may be granted following a review and recommendation by a resource advisor, and the line officer will prescribe the location, use conditions, and rehabilitation requirements with avoidance of adverse effects to native fish and sensitive aquatic species as a primary goal.
4. During layout, field crews would review the site-specific implementation notes in the Clark Fork Face project record for RCA buffer widths per stream and coordinate with

fisheries / hydrology staff to assure that RMOs are met.

Western toad habitat.

1. Follow Best Management Practices for Forestry in Montana, as revised (Montana DNRC, 2015).
1. Follow the Missoula RMP (USDI-BLM 2021), Appendix B: Aquatic and riparian habitat conservation strategy.

Terrestrial wildlife: Big Game, BLM-Sensitive species

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-27 – DF-31:
    a. DF-27. Retain snags at a level appropriate for multiple species and create large-diameter snags for cavity nesters, if feasible.
    b. DF-28. Identify maintenance or replacement of features that maintain continuous representation of mature forest components. Examples of features that should be retained include dead trees (snags), downed wood (coarse woody debris), and diverse stand structures located across landscapes that shift in location over time.
    c. DF-29. Scatter fine materials not utilized (seedlings, saplings, tops, branches, cull logs, and some down woody material) on the forest floor where and when it would not contribute to fire hazard in order to maintain nutrient cycling, provide for wildlife features, and discourage cross-country motorized travel.
    d. DF-30. Whenever possible, plant openings larger than 20 acres in size resulting from forest treatment or large-scale events in forested habitats when natural regeneration does not become established to desired levels within 15 years or cannot be reasonably expected in 15 years.
    e. DF-31. Design treatments to maintain wildlife corridors within home ranges, between seasonal home ranges, and for dispersal. Wildlife travel corridors typically follow ridges, saddles, and riparian corridors.
2. Treatments would follow guidelines provided in the Northern Region Snag Management Protocol (USDA-FS. 2000) and Trees and Logs Important to Wildlife in the Interior Columbia River Basin (Bull et al. 1997) to maintain and/or improve snag or large woody debris habitat.
3. The Missoula Field Office food/attractant storage strategy for conservation of the grizzly bear and other wildlife (USDI-BLM 2006) would be followed during project implementation to reduce potential human/wildlife conflicts.
4. Treatments would be designed to maintain wildlife corridors within home ranges, between seasonal home ranges, and for dispersal. Wildlife travel corridors typically follow ridges, saddles, and riparian corridors.
5. A mixture of spring and fall burns would be prescribed to mitigate potential adverse effects to migratory birds, grizzly and black bears, elk, and other big game.
6. Where feasible, improve forage quantity and quality through low to moderate severity prescribed burning post-harvest.
7. Retain biological legacies, such as large healthy trees, large decadent trees, snags, logs, and other coarse woody debris on the forest floor.

8. Limit timber sale activity in big game winter range to as short a period as possible to minimize disturbance.

Migratory Birds

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-32:
    a. DF-32. If migratory birds are present, implement project design features to avoid or minimize impacts from ground disturbing activities.
2. On a case-by-case basis, considering habitat dependent variables, a timing restriction may be implemented to protect migratory bird nesting in specified areas as determined by the wildlife biologist.
3. Vegetation treatments would discontinue and potentially be modified in areas were an active eagle, goshawk, great gray owl, or flammulated owl nest is discovered and resume after the nesting season. Raptor surveys and identification would be done by or in consultation with the BLM biologist, biological technician or similarly qualified individuals.
4. Prior to any vegetation treatments in areas with known goshawk activity, surveys would be conducted by a BLM Wildlife Biologist or their delegate to determine use level, and mitigations such as timing restrictions, or treatment area modification would be applied as determined by the wildlife biologist and forester / project lead.

Forest Products

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-7, DF-8:
    a. DF-7. Timber salvage project areas would have some areas that are left untreated as retention patches to maintain wildlife habitat. Only standing dead and dying trees would be allowed to be taken as firewood unless live trees cutting area are designated. The BLM could designate specific areas for firewood cutting of live trees to meet resource objectives or BLM authorized uses such as leases and right-of-way.
    b. DF-8. To protect snag habitat for wildlife, dead trees greater than 24 inches d.b.h. would not be permitted to be cut for firewood unless they are within two tree lengths of an open road. An exception to this is if there is a high density of dead trees creating a public safety hazard and the needs for snag dependent wildlife habitat have been met, dead trees greater than 24 inches d.b.h can be harvested.
2. Follow the Forestry Best Management Practices for Montana (BMPs) (MT-DNRC 2015)
3. Avoid damaging healthy native deciduous trees during harvest unit and spur road layout as well as remove encroaching conifers during implementation. Consider targeted prescribed burning to encourage expansion of existing populations.
4. Where practical, restore or maintain special habitat components within roosting and foraging habitat, such as snags, tall brush and forested understories, open water sources along riparian corridors, or other features contributing to bat species productivity.
5. Landing locations within designated RCA buffers (see section 1.5 tables 3 and 4) should be avoided; if needed a site specific variance may be authorized by project hydrologist along with a site specific rehabilitation plan for designated lands. Where needed, logging slash should be decked on the uphill side of the road prism or on the road prism when placed within a RCA.
6. All affected areas (including treatment areas and roads) would have Class III Inventory

conducted prior to project implementation.

Temporary and Permanent Road Construction, Road Maintenance and Maintenance of Closures.

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-19, DF-20, DF-21, DF-22:
    a. DF-19. Avoid placing new facilities or infrastructure within an RCA to extent practicable. Where new facilities must occur in an RCA (e.g., road stream crossings, boat ramps, docks, trails), complete watershed or site-specific analysis so as to assure location does not retard or prevent attainment of RMOs.
    b. DF-20 Provide and maintain fish passage at new, replacement, and reconstructed road crossings of existing and potential fish-bearing streams, unless barriers are determined beneficial for native fish and /or sensitive aquatic species conservation.
    c. DF-21. Avoid locating new roads or road-related facilities in RCAs. Exceptions may be granted upon watershed or site-specific analysis focused on how road design features would minimize or avoid adverse effects to aquatic and riparian resources at site-specific, reach, and watershed scales.
    d. DF-22. Avoid side-casting of road surface material into areas where it may reach RHCAs.
2. All roads used for commercial log hauling would follow the Forestry Best Management Practices for Montana (BMPs) (MT-DNRC 2015).
3. Avoid damaging healthy native deciduous trees during harvest unit and spur road layout as well as remove encroaching conifers during implementation. Consider targeted prescribed burning to encourage expansion of existing populations.
4. Temporary spur roads would be utilized for a specific treatment and would remain in place for no longer than 3 years from time of construction. Following use and at the conclusion of the treatment, all temporary roads would be obliterated or made impassable, have drainage restored and have slash and native seed applied.
5. All proposed new permanent spur roads would be physically closed to public motorized use immediately upon construction. Physical closures include but are not limited to gates, boulders / riprap, Kelly-humps / tank-traps, or obliteration of a segment of road at it's origin.
6. Closures would be monitored via contractors, BLM employees and volunteer public who would be directed to immediately document and report any breach observed to the BLM. Upon notification of a failed closure, the BLM would take action to repair, replace or improve the closure within 30 days or as soon as conditions allow (periods of deep snow or saturated roads may delay closure repair or replacement depending on the season of discovery).
7. Road maintenance within riparian conservation buffers (see section 1.5, tables 3 and 4) will include sediment control measures (such as slash filter windrows or straw waddles) at all stream crossings with perennial surface water present.
8. To maintain and improve long-term stream shade and temperature regulation, maintain large diameter trees (>8 inches) when the streams are within 50 feet of road

prisms. Removal of branches to allow for vehicle passage and better sightlines is appropriate in these areas. If specific trees pose a safety hazard (hazard trees on open roads) these trees can be removed. Deciduous trees should be retained as much as possible, including cottonwood and aspen.

9. All affected areas (including treatment areas and roads) would have Class III Inventory conducted prior to project implementation.
10. The MiFO geologist would be consulted with and involved in development of any gravel source for road maintenance.
11. When roadside vegetation removal occurs for road maintenance, follow these requirements:
    a. All trees 8" DBH (diameter at breast height, 4.5' above ground) and greater shall be considered "merchantable" unless deemed cull (non-merchantable) by a MiFO Forester.
    b. All merchantable trees shall have the root wads cut off perpendicularly to the bole, at approximately 6" above soil height. Tops shall not be cut unless approved by the COR and MiFO Forestry Staff.
    c. All merchantable trees shall have all limbs removed and severed flush with the bole.
    d. All limbed merchantable trees (logs) shall be decked in a location as determined by the COR and MiFO Forestry Staff such that they are available for future sale.
    e. In the case of a BLM Controlled Road crossing other ownerships, merchantable timber remains the property of the underlying landowner and its removal must be coordinated with them.
    f. All severed limbs shall be considered slash and removed from the site by the contractor / operator, lopped and scattered or chipped and dispersed on site to a depth not to exceed 4" as determined by the COR and MiFO Fuels Staff.
    g. All root wads shall be removed from the site and disposed of by the contractor.
    h. All saplings and trees < 8" DBH shall be considered slash and removed from the site by the contractor / operator, lopped and scattered or chipped and dispersed on site to a depth not to exceed 4" as determined by the COR and MiFO Fuels Staff.
12. Prior to road maintenance activities, likely habitats would be surveyed prior for Special Status Plants: keeled bladderpod and Howell’s gumweed. If found, follow SS Plant guidance in this section.
13. Dispose of road right-of-way slash in such a way that it does not pose a barrier to big game travel.
14. On open roads and popular recreation routes, coordinate maintenance activities with the BLM Outdoor Recreation Planner to assure that road maintenance activities meet the needs (E.g. increased safety and sight distance) while not negatively impacting the user experience. Consider such things as limbs severed cleanly at tree boles, rather than ripped from the tree or shattered; cutting trees and brush as close to the ground as possible (avoid high stumps); any removed material (E.g. rotten/ broken culverts or flappers) should be completely removed from the site and excess dirt or material should be graded smooth or removed. Additionally, inform the public through proper

signage and road guards as needed on high use roads to reduce user conflicts.
15. Avoid road maintenance in the handicap hunting area during hunting season.

Noxious Weeds

1. Follow the Missoula RMP (USDI-BLM 2021), Appendix P. DF-34:
    a. DF-34. Revegetate disturbed soils to stabilize and reduce the introduction or spread of invasive or noxious weed species.
2. Follow the Missoula Field Office Integrated Weed Management Plan (USDI-BLM 2019).
3. Follow the Missoula Field Office Integrated Weed Management Environmental Assessment (USDI-BLM 2009)
4. Require washing and inspection of all heavy equipment prior to entry onto federal lands.
5. Require weed treatments along haul routes and main access routes prior to and following vegetation treatments to the greatest extent possible.
6. Require native seed application to all soils exposed during harvesting operations (such as at landings) and on all reclaimed roads as well as new permanent road cut and fill slopes.
7. Monitor and treat all landing and burn pile locations following harvest operations.
8. Utilize biocontrol or other non-chemical means of control where spraying is ineffective or inadvisable such as near SS Plant populations.
9. In areas with high concentrations of noxious weeds, consider low impact harvest practices such as skyline yarding or over-snow skidding.

Smoke Management

1. Follow the Missoula RMP (USDI-BLM 2021), AC-MA-2:
    a. AC-MA-2. For prescribed burns, continue to participate in the Montana Idaho Airshed Group to manage smoke impacts and coordinate with the Montana Department of Environmental Quality (MDEQ).

Native Bat Species.

1. Where practical, restore or maintain special habitat components within roosting and foraging habitat, such as snags, tall brush and forested understories, open water sources along riparian corridors, or other features contributing to bat species productivity

Canada Lynx Habitat

1. Within the Canada lynx habitat occurring in Lynx Analysis Units and lynx critical habitat, (generally Engelmann spruce (ES) and subalpine fir (AF) cover types within HTG 4 – HTG 6) irregular thinning techniques such as Variable Density Thinning (VDT) (thinning which incorporates a range of stem spacings and reserve areas) or Adaptive Complexity Thinning (ACT) would be utilized where thinning is implemented.
2. Also within Canada lynx habitat as described above, harvest treatments would not include burning and timber harvest would be conducted to leave shrub cover (by conducting operations over snow cover) where possible. Treatments will focus on areas not currently hosting lynx foraging or denning habitat. In these stands, treatments would

be designed to enhance or create dense early stand initiation foraging habitat and dense mature multistory denning habitat, in a mosaic pattern across the landscape over space and time. In areas not currently providing lynx foraging and denning habitats treatments are intended to result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx (USDI-BLM 2021).

Wolverine

1. Incidental occurrence of wolverine will be documented and reported to a BLM wildlife biologist. Where practical and within the scope of the NEPA decision and Section 7 (A) (2) consultation; implement avoidance and or minimization measures such as temporary timing and or spatial restrictions to where practical to reduce the potential or level of disturbance to wolverine, especially dispersing females.
2. Wolverines can locate dead animals from long distances and scavenge for the carcasses of big game, therefore, leave such carcass resources undisturbed in treatment areas or move off treatment site when possible. Remove carcasses off roads to reduce the likelihood of striking a wolverine.
3. Written authorizations and any subsequent restrictions for hauling and snow plowing on the Garnet Range Road shall consider additional conservation measures for wolverine, especially in female dispersal habitat, including but not limited to using alternate haul routes, suspension of plowing activities and or area restriction.
4. In consultation with the Service, the BLM will implement camera trap wolverine monitoring w/I and or adjacent to select BLM treatment units and roads of the project area.

12 Appendix G: Natural Range of Variability Tables by HTG

HTG 1

Habitat Type Groups Tables				
HTG 1 - WARM DOUGLAS-FIR				
Habitat Type Codes: 110, 130, 140, 141, 142, 160, 161, 162, 210, 220, 230, 311, 321, 340, 350 (SIMPPLLE HTG Groups A2, B1) Historic Cover Type: PP and Grass / Shrub Ecotone, PP(DF) Acres: 40,963.60 Fire Group 4: Nonlethal Fire Regime Ownership: BLM 15%, Private 40%, DNRC 17%, Stimson Lumber Company 14%, TNC 13%	**Natural Variability**	**Current Condition All Ownerships 40,963.60 acres**	**Current Condition BLM ONLY: 6,084.72 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Nonlethal severity	5-25 years	>50 years	>50 years	10-15 years
Primary Structural Component: % total acres				
Grass / Forb / Shrub		8	4	
Seedling - Sapling (0-5" dbh)	<1	17	6	<1
Pole (5 - 9" dbh)	<1 - 13	0	6	<1 - 13
Two-Storied	<1 - 12	1	5	<1 - 12
Multi-Storied			1	
Medium (9-15" dbh)				
Single-Storied	<1 - 9	5	7	<1 - 9
Two-Storied		16	23	
Multi-Storied		2	8	
Large (15 - 21" dbh)				
Single-Storied	9 - 19	11	1	9 - 19
Two-Storied		32	10	
Multi-Storied		3	19	
Very Large				
Two-Storied		3	3	
Multi-Storied	67 - 87	1	7	67 - 87
Cover Type: Dominant Species % total acres				
Grass / Shrub / Forb			5	
PP	85 - 89	38	11	85 - 89
DF	6 - 9	47	73	6 - 9
WL	4 - 7	7	1	4 - 7
AF			3	
LP	1	0	8	1
Patch Size (% total acres):				
< 50	< 5%	Not available	74%	< 5%
50 - 150	5 - 10%		23%	5 - 10%
150 - 250	10 - 25%		3%	10 - 25%
250 - 500	25 - 40%		0%	25 - 40%
>500	30 - 45%		0%	30 - 45%

(Av. Patch size over 500 acres)	(800 acres)			(600 acres)

HTG 2

Habitat Type Groups Tables				
HTG 2 - COOL DOUGLAS-FIR				
Habitat Type Codes: 260, 262, 282, 312, 313, 322, 324 (SIMPPLLE HTG Code B2) Historic Cover Type: PP, DF (WL, LP = *minor components*) Acres: 128,471.53 Fire Group 4 and 6: Nonlethal and Mixed Fire Regimes Ownership: BLM 10%, USFS 2%, Private 38% DNRC 28% U of M 1% Stimson Lumber Company 7% TNC 14%	**Natural Variability**	**Current Condition All Ownerships 128,471.53 acres**	**Current Condition BLM ONLY 13,191.13 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Nonlethal and Mixed Severity	10 - 50 years	> 50 years	> 50 years	10 - 30 years
Primary Structural Component: % total acres				
Grass / Forb / Shrub	< 1	7	3	< 1
Seedling - Sapling (0-5" dbh)	< 1 - 9	10	6	< 1 - 9
Pole (5 - 9" dbh)	< 1 - 9	0	9	< 1 - 9
Two-Storied		1	5	
Multi-Storied			1	
Medium (9-15" dbh)	< 1 - 7			< 1 - 7
Single-Storied		6	3	
Two-Storied		14	20	
Multi-Storied		4	9	
Large (15 - 21" dbh)	7 - 14			7 - 14
Single-Storied		12	1	
Two-Storied		34	13	
Multi-Storied		6	21	
Very Large	50 - 65	1		50 - 65
Two-Storied		5	3	
Multi-Storied		0	6	
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			3	
AF/ ES			1	
PP	63 - 66	47	1	63 - 66
DF	4 - 7	32	78	4 - 7
WL	3 - 5	11	1	3 - 5
LP	< 1	3	10	< 1
Patch Size (% total acres):				
< 50	<5	Not available	65%	5-10%
50 - 150	5-10%		31%	5-10%
150 - 250	10-25%		4%	10-20%
250 - 500	25-40%		0%	10-20%
>500	30-45%		0%	55-65%

(Av. Patch size over 500 acres)	(800 acres)			(600 acres)

HTG 3

Habitat Type Groups Tables				
HTG 3 - MOIST DOUGLAS-FIR				
Habitat Type Codes: 220, 260, 261, 281, 283, 292, 360, 323, 330, 370 (SIMPPLLE HTG Groups B3, C1, D2) Historic Cover Type: DF, WL, LP, PP Acres: 2,367.97 Fire Group 6: Mixed Fire Regime Ownership: BLM 10%, Private 69%, DNRC 7%, U of M 1%, Stimson Lumber Company 5%, TNC 9%	**Natural Variability**	**Current Condition All Ownerships 2,367.97 acres**	**Current Condition BLM ONLY 229.53 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Mixed severity	25 - 125 years	> 50 years	> 50 years	50 - 100 years
Primary Structural Component: % total acres				
Grass / Forb / Shrub		1		
Seedling - Sapling (0-5" dbh)	< 1	8	23	< 1
Pole (5 - 9" dbh)	2 - 17			2 - 17
Single-Storied	4 - 17	0	2	4 - 17
Two-Storied		1		
Medium (9-15" dbh)				
Single-Storied	4 - 13	21	1	4 - 13
Two-Storied		11	9	
Multi-Storied		2	10	
Large (15 - 21" dbh)				
Single-Storied	40 - 53	35	4	40 - 53
Two-Storied		11	9	
Multi-Storied		1	10	
Very Large		3		
Two-Storied	23 - 34	5	5	23 - 34
Multi-Storied		0	17	
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			3	
PP	12 - 17	2	10	12 - 17
DF	10 - 15	96	82	10 - 15
WL	52 - 58	1	1	52 - 58
LP	10 - 20		4	10 - 20
Populus Spp.	1 - 5	0	0	1 - 5
Patch Size (% total acres):				
< 50	5-10%	Not available	57%	5-10%
50 - 150	5-10%		33%	5-10%

150 - 250	10-20%		8%	10-20%
250 - 500	10-20%		2%	10-20%
>500	55-65%		0%	55-65%
(Av. Patch size over 500 acres)	(900 acres)			(600 acres)

HTG 4

Habitat Type Groups Tables				
HTG 4 - MOIST SUBALPINE FIR				
Habitat Type Codes: 620, 621, 624, 625, 660, 661, 662, 670, 740 (SIMPPLLE HTG Groups D3, E2) Historic Cover Type: DF, LP, WL (AF, ES) Acres: 18,155.15 Fire Group 9: Lethal and Mixed Fire Regimes Ownership: BLM 14%, Private 25%, DNRC 29%, Stimson Lumber Company 22%, TNC 9%	**Natural Variability**	**Current Condition All Ownerships 18,155.15 acres**	**Current Condition BLM ONLY 2,587.53 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Mixed Severity Lethal Severity	50 - 80 years (flood & fire) 150 - 200 years (fire)	50 years (Logging / Mining) 100 Years (Mining)	50 years (Logging / Mining) 100 Years (Mining)	50 - 100 years (flood / fire)
Primary Structural Component: % total acres				
Grass / Forb / Shrub	4 - 36	1	1	4 - 36
Seedling - Sapling (0-5" dbh)	<1 - 54	21	7	<1 - 54
Pole (5 - 9" dbh)	<1 - 27			<1 - 27
Single-Storied		0	8	
Two-Storied		2	10	
Medium (9-15" dbh)	<1 - 29			<1 - 29
Single-Storied		3	4	
Two-Storied		23	12	
Multi-Storied			12	
Large (15 - 21" dbh)	11 - 54			11 - 54
Single-Storied		5	1	
Two-Storied		32	11	
Multi-Storied		4	18	
Very Large	5 - 51	0		5 - 51
Two-Storied		1	3	
Multi-Storied		1	13	
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			1	
DF	34 - 77	53	70	34 - 77
pp			1	
WL	1 - 20	12	0	1 - 20
LP	< 1 - 28	8	22	< 1 - 28
AF / ES and / or Populus spp.	< 1 - 26	2	6	< 1 - 26
Patch Size (% total acres):		Not available		
< 50	28 - 100%		68 - 100%	28 - 100%

50 - 150	0 - 25%		0 - 32%	0 - 25%
150 - 250	0 - 25%		0%	0 - 25%
250 - 500	0 - 11%		0%	0 - 11%
>500	0 - 11%		0%	0 - 11%
(Av. Patch size over 500 acres)	N/A			N/A

HTG 5

Habitat Type Groups Tables				
HTG 5 - COLD SUBALPINE FIR				
Habitat Type Codes: 663 640, 690, 691, 720 (SIMPPLLE HTG Groups F1) Historic Cover Type: WL, LP, DF (AF, ES) Acres: 726.12 Fire Group 9: Lethal and Mixed Fire Regimes Ownership: BLM 11%, Private 28%, DNRC 23%, Stimson Lumber Company 10%, TNC 29%	**Natural Variability**	**Current Condition All Ownerships 726.12 acres**	**Current Condition BLM Only 79.73 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Mixed Severity Lethal Severity	50 - 100 years 100 - 200 + years	> 75 years	> 75 years	75 - 125 years
Primary Structural Component: % total acres				
Grass / Forb / Shrub			15	
Seedling - Sapling (0-5" dbh)	<1 - 2	45	1	<1 - 2
Pole (5 - 9" dbh)	6 - 25			6 - 25
Single-Storied	11 - 27	3	5	
Two-Storied		3	31	
Medium (9-15" dbh)				
Single-Storied	7 - 19	4		7 - 19
Two-Storied		1	29	
Multi-Storied		18		
Large (15 - 21" dbh)				
Single-Storied	40 - 54	12	5	40 - 54
Two-Storied		0	5	
Multi-Storied		12	7	
Very Large (>21")		0		
Two-Storied	5 - 12		2	5 - 12
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			15	
PP	0	0	8	0
DF	20- 30	0	23	20 - 30
WL	38 - 42	19	2	38 - 42
LP	28 - 39	78	53	28 - 39
AF and ES	1 - 4	0	0	1 - 4
Patch Size (% total acres):				
< 50	5-10%	Not available	68%	5-10%
50 - 150	5-10%		32%	5-10%

150 - 250	10-15%		0%	10-15%
250 - 500	15-25%		0%	15-25%
>500	50-60%		0%	50-60%
(Av. Patch size over 500 acres)	(600)			(600)

HTG 6

Habitat Type Groups Tables				
HTG 6 - VERY COLD SUBALPINE FIR				
Habitat Type Codes: 820, 830, 831, 832, 860 850, 870 Historic Cover Type: AF, ES Acres: 3,502.82 Fire Goup 10: Fire is a secondary disturbance Ownership: BLM 10%, Private 25%, DNRC 35%, Stimson Lumber Company 9%, TNC 20%	**Natural Variability**	**Current Condition All Ownerships 3,502.82 acres**	**Current Condition BLM Only 355.45 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Mixed Severity Lethal Severity	50 - 100 years >100 years	> 75 years	> 75 years	50 - 100 years
Primary Structural Component: % total acres				
Grass / Forb / Shrub		12	1	
Seedling - Sapling (0-5" dbh)	< 1	37	4	< 1
Pole (5 - 9" dbh)	2 - 17	1		2 - 17
Single-Storied	4 - 17		5	4 - 17
Two-Storied			10	
Medium (9-15" dbh)				
Single-Storied	4 - 13	4	1	4 - 13
Two-Storied		7	21	
Multi-Storied		1	15	
Large (15 - 21" dbh)				
Single-Storied	40 - 53	7	2	40 - 53
Two-Storied		27	4	
Multi-Storied		4	22	
Very Large (>21")		0	1	
Two-Storied			6	
Multi-Storied	23 - 34	0	8	23 - 34
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			1	
PP	----	0	1	5 - 10
DF	> 75	45	83	> 50
WL	----	0	0	10 - 15
LP	< 25	43	15	10 - 20
AF and ES	----	0	0	<5
Patch Size (% total acres):				

Fire disturbance is generally secondary to site factors (climate and soil) relative to forest development on these sites. Vegetation recovery and succession is slow following disturbance events.				

HTG 9, NA and blank

Habitat Type Groups Tables				
HTG 9 - Grass / Forb / Shrub				
Habitat Type Codes: NF1 (grasslands), NF2 (shrublands), NF4 (Riparian) Historic Cover Type: Grass / Shrub / Riparian Acres: 28,675.54 Fire Group: N/A Ownership: BLM 4%, Private 92%, DNRC 3% TNC 1%	**Natural Variability**	**Current Condition All Ownerships 28,675.54 acres**	**Current Condition BLM ONLY 1,056.19 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ Lethal severity				
Primary Structural Component: % total acres				
Grass / Forb / Shrub	100	100	87	100
Seedling - Sapling (0-5" dbh)			0	
Pole (5 - 9" dbh)			0	
Two-Storied			0	
Medium (9-15" dbh)				
Single-Storied			0	
Two-Storied			1	
Large (15 - 21" dbh)				
Single-Storied				
Two-Storied			3	
Multi-Storied			1	
Very Large			2	
Two-Storied			1	
ulti-Storied			2	
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			89	
QA, CW			1	
PP		0	7	
DF		0	4	
WL		0	0	
LP		0	0	
Patch Size (% total acres):				
< 50	N/A	N/A	N/A	N/A
50 - 150	N/A	N/A	N/A	N/A
150 - 250	N/A	N/A	N/A	N/A
250 - 500	N/A	N/A	N/A	N/A
>500	N/A	N/A	N/A	N/A
(Av. Patch size over 500 acres)	N/A	N/A	N/A	N/A

Habitat Type Groups Tables				
HTG - Not Applicable				
Habitat Type Codes: XX3 (urban / rural), XX4 (barren), XX5 (water), XX1 (Agriculture) Historic Cover Type: Unknown Acres: 62.63 Fire Group : N/A Ownership: BLM 91%, Private 4%, DNRC 4%	**Natural Variability**	**Current Condition All Onwerships 62.63 acres**	**Current Condition BLM ONLY 57.20 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ N/A				
Primary Structural Component: % total acres				
Non Forest		32	8	
URBAN		48	46	
WATER		20	17	
Agriculture			5	
Medium			4	
two-story			5	
multi-story				
Large			8	
two-story				
multi-story				
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			83	
QA, CW			2	
PP		0	10	
DF		0	5	
WL		0	0	
LP		0	0	
Patch Size (% total acres):				
< 50	N/A	N/A	N/A	N/A
50 - 150	N/A	N/A	N/A	N/A
150 - 250	N/A	N/A	N/A	N/A
250 - 500	N/A	N/A	N/A	N/A
>500	N/A	N/A	N/A	N/A
(Av. Patch size over 500 acres)	N/A	N/A	N/A	N/A

Habitat Type Groups Tables				
HTG - Blank				
Habitat Type Codes: XX1 (Agriculture), XX3 (urban / rural), XX4 (barren), XX5 (water) Historic Cover Type: Unknown Acres : 24,266.54 Fire Group : N/A Ownership: USFS 1%, Private 83%, DNRC 6%, Stimson 1%, TNC 9%	**Natural Variability**	**Current Condition All Ownerships 24,266.54 acres**	**Current Condition BLM Only 24.51 acres**	**Desired Condition**
Mean Disturbance Interval (yrs) 1/ N/A				
Primary Structural Component: % total acres				
Agriculture		13	3	
Nonforest		4	22	
Urban		7	28	
Water		3	6	
Blank		74		
Pole			0	
Medium			13	
two-story			0	
Large				
two-story			6	
Very Large				
two-story			3	
multi-story			3	
Cover Type: Dominant Species % total acres				
Grass / Shrub / NF			62	
QA, CW			9	
PP		0	8	
DF		0	19	
WL		0	2	
LP		0	0	
Patch Size (% total acres):				
< 50	N/A	N/A	N/A	N/A
50 - 150	N/A	N/A	N/A	N/A
150 - 250	N/A	N/A	N/A	N/A
250 - 500	N/A	N/A	N/A	N/A
>500	N/A	N/A	N/A	N/A
(Av. Patch size over 500 acres)	N/A	N/A	N/A	N/A

13 Appendix H: Reasonably Foreseeable Actions

Reasonably Foreseeable Actions Within the CFF planning area.

Agency / Org.	Project	Legal / Location	Treatment type	Timeframe	Est. Acres
DNRC	All Don	Sec 2,4,10 T12N R17W & Sec 36 T13N R17W	Harvest	Current	502
DNRC	Bybee Carriage	Sec 16 T12N R16W	Harvest	Current	68
DNRC	Trappin Shack	Sec 15 & 22 T12N R16W	Harvest	Current	362
DNRC	36 Game	Sec 2 T12N R17W, Sec 31 T13N R16W, Sec 36 T13N R17W	Harvest	Sells 2022	480
DNRC	Game Changer	Sec 5 & 6 T12N R16W Section 31 T13N R16W	Harvest	Current	196
DNRC	Top Secret	Sec 16 T12N R14W	Harvest	Sells 2022	340
DNRC	GoldiLogs	Sec 36 T14N R17W	Harvest	Sells 2022	570
DNRC	Arkansas	Sec 31 T13N R16W	Hand Thin	Sold	167
DNRC	TickLish	Sec 13,14 T12N R16W	Hand Thin	Sold	180
DNRC	Ash-B	Sec 4,5 T12N R16W & Sec 33,34 T13N R16W	Hand Thin	Bid 2022	248
DNRC	Phase 2	Sec 28 & 33 T13N R16W	Hand Thin	Sold	98
DNRC	Camas Hump	Sec 4, 5 T12N R15W & Sec 33 T13N R15W	Hand Thin	Bid 2022/2023	400
DNRC	WashYa Doin	Section 36 T12N R16W	Hand Thin	Bid 2022/2023	174
DNRC	Blixit Once	Section 29 T13N R16W	Hand Thin	Bid 2022	124
Missoula County	Wallace Creek	Wallace Creek, adjacent to BLM. 46.79694, -113.64951	Fuels reduction with harvest	complete before 1/23	16
Missoula County	Ashby Creek	Ashby Creek, 46.81487, -113.62270.	Fuels reduction with harvest	Late 2023 into 2024	31
Missoula County	Turah	Turah, 46.79901, -113.79055.	Fuels reduction with harvest	2024	30
USFS	Wildfire Adapted Missoula (WAM)	Lands South of I-90, within CFF planning area	small tree thinning and burning, cut pile burning, and thinning and burning	Within the next 20 years	1000
Grand total					**4,986**

14 Appendix I: Responses to Public Comments

This appendix summarizes the substantive comments that the BLM received during the public comment period for the Draft EA and provides the BLM responses to those comments. On December 5, 2022, the BLM released the Draft EA announcing a comment period that would conclude on January 15, 2023. The BLM received approximately 65 comments on the Draft EA during the comment period. The BLM received comments from individuals, groups, organizations, businesses, state, and local government agencies.

The BLM considered all comments submitted during the comment period. The BLM treated all submissions equally and did not give different consideration to submissions based on geographic location, organizational affiliation, or other status of the respondents. Additionally, the BLM did not give different consideration to comments based on the number of submissions making the same comment.

The BLM reviewed comments to identify substantive comments, which are comments that:

- Question, with reasonable basis, the accuracy of information in the Draft EA
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis,
- Present new information relevant to the analysis,
- Present reasonable alternatives other than those analyzed in the Draft EA, and
- Cause changes or revisions in one or more of the alternatives (USDI BLM 2008, p. 66).

The BLM summarized these substantive comments into 'comment summaries.' Comment summaries are statements that identify and describe specific issues or concerns. The BLM combined similar concerns voiced in multiple letters into one comment summary. This appendix presents the comment summaries and the BLM responses by issue topic. The comment summaries and responses are intended to be explanatory in nature; if there are any inadvertent contradictions between this appendix and the main chapters of the Proposed EA/Final Decision, the main chapters of the Proposed EA/Final Decision present the controlling information.

Public Engagement

1. **Comment Summary:** Concern about public involvement process and NEPA comment period. Comments alleged that "Section 1501.6 of NEPA states that the public comment period for an EA has to be a minimum of 30 days." (Inaccurate; provision reflects FONSI under certain circumstances). Alleged they did not see press release/FB. Alleged that the comment period was not sufficient.

   Comment Response: Thank you for your comment. The BLM "shall involve the public, State, Tribal, and local governments, relevant agencies, and any applicants, to the extent practicable in preparing environmental assessments" (1502.5(e)). The BLM fulfilled this requirement for the Clark Fork Face Environmental Assessment.

   The BLM provided meaningful public engagement throughout the Clark Fork Face process as stated in the EA (see section 4.1). First, the BLM provided a scoping opportunity with two open houses for the public to gain information, interact with specialists, and submit comments early in the process (see Section 4.1). The BLM appreciated the public participation at the open houses and submission of scoping

comments, which it considered in drafting the Environmental Assessment. Based on the public open houses and scoping comments, the BLM next provided a 15-day comment period (newspaper and ePlanning posting occurred on 12/5/22). Upon requests from the public for a comment extension, the BLM extended the comment period to 45-days (announced via press release and ePlanning update on 12/13/22). The BLM appreciates the public comments submitted during the public comment period, which is has considered and updated the EA as appropriate (see pages and sections listed in comment responses). The BLM provided meaningful public involvement throughout the entire CFF process by scoping during the early project development phases with an opportunity to ask questions, provide information, and then a comment period on the Environmental Assessment extended as requested to allow more review of the document.

2. **Comment Summary:** Thankful for posting fliers to notify public about project; appreciated open houses to answer all the questions he/she had.

   Comment Response: Thank you for your comment. We are glad the public engagement strategy was effective in notifying individuals of public open houses for scoping as well as the press release and posted notices throughout communities.

3. **Comment Summary:** Why was this EA not posted to the Federal Register?

   Comment Response: Thank you for your comment. The Federal Register Notice of Scoping, Notice of Availability of the Draft EIS, and Notice of the Final EIS are CEQ requirements for an Environmental Impact Statement (EIS). These are not public notification requirements for an Environmental Assessment.

Range of Alternatives

1. **Comment Summary:** The BLM should include an alternative that does not allow commercial logging and without road-building but with road reduction and reclamation options.

   Comment Response: Thank you for your comment. Based on public input the BLM has considered these alternatives. Please see Section 2.3 Alternatives Considered but Not Analyzed in Detail for the discussion of an Alternative that would include no commercial logging. Also see Section 2.2 – Alternative 2b, this Sub-alternative has been developed to consider an alternative with no new road construction in detail.

2. **Comment Summary**: The BLM should **c**onsider an alternative that does not cut mature or old growth forests.

   Comment Response: Thank you for your comment, based on public input this alternative was considered. Please see Section 2.3 Alternatives Considered but Not Analyzed in Detail for the discussion of this alternative.

3. **Comment Summary**: The BLM should consider an alternative where the 6 miles of temp roads are permanent for recreation use.

   Comment Response: Thank you for your comment. Limiting new permanent road construction is in alignment with the BLM management direction (USDI-BLM 2021) as well as the USFWS consultation for the RMP (USDI-FWS 2020). Building roads for

increased recreational use and access is not within the Purposed and Need of the project and, thus, not included as an alternative to analyze in detail.

Maps and Information

1. **Comment Summary:** The maps are unreadable, and scale should be improved. Please provide maps showing existing roads, proposed roads, past harvests, proposed harvests.

   Comment Response: Thank you for your comment. The BLM has reviewed the maps associated with this project and had provided improved maps based on comments received (See Appendix D.). The proposed action maps in Appendix D include all existing roads on BLM managed lands as well as all proposed new roads. The maps also indicate unroaded areas. The proposed action maps include all proposed treatments at improved scale for readability. Current guidance from CEQ directs assessment of past actions in the aggregate. Existing conditions and past actions are described in Chapter 3 Affected Environment.

2. **Comment Summary:** Concern about the process, requests an EIS. Disagree with the purpose and need. Insufficient consultation.

   Comment Response: Thank you for your comment. Please refer to the comment response regarding public involvement in section 15.0 above. The Purpose and Need for this project was developed through internal and external scoping as described in section 1.0 of the document. Issue development was performed through internal and external scoping and refined through use of Impact Analysis Worksheets (available in the Project Record) see Section 1.4 of the document. This EA tiers to the Missoula RMP EIS for purposes of NEPA; none of the effects analyzed in this EA were beyond those already analyzed in the Final Environmental Impact Statement (EIS). This EA is in conformance with the RMP for purposes of FLPMA. Section 1.3 of the EA describes Land Use Plan conformance. Formal Consultation with the USFWS has been completed; the USFWS issued its Biological Opinion on Nov. 8, 2022 (for further comment response regarding Section 7 consultation, see section 15.11 - 15.18 of this appendix).

3. **Comment Summary:** Please disclose RMP requirements.

   Comment Response: Thank you for your comment. The EA tiers to the RMP EIS for purposes of NEPA and is in conformance with the RMP for purposes of FLPMA. Section 1.3 of the EA describes Land Use Plan conformance with specific Management Actions, Goals and Objectives from the RMP as they pertain to this project.

Climate Change, Greenhouse Gasses and Carbon

1. **Comment Summary:** Do old growth forest store more carbon than wood products that would be removed? See Krankina and Harmon 2006 on carbon gains against climate change.

   Comment Response: Thank you for your comment. As stated in section 1.1 of the EA, the Purpose and Need of this project includes the need to promote resilience to wildfire by reducing forest fuel loading and breaking up homogeneous stand conditions, and to restore healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV. As stated in Krankina and Harmon 2006:

"Restoring forest resilience to extreme disturbance events through thinning to reduce stocking levels can generate wood-based products or biomass energy as byproducts of forest treatments while decreasing the likelihood that large-scale future disturbances would create both immediate and long-term carbon releases through fire or decomposition." As mentioned in Lippke et al.,2004, "The greatest rate of carbon storage occurs in the first 50 years of growth and then the rate lessens over time… from empirical data there is little if any increase beyond 120 years" (Lippke et al., 2004a). Additionally, forest products such as building materials continue to store carbon while the forest carbon stores increase through vigorous growth, having an additive and compounding effect on carbon sequestration through time (OFRI 2006).

Please see the discussion of climate change in Section 3.2.3 above for a further description of the proposed action effects with regard to climate change and Section 1.5 for a discussion of greenhouse gas emissions as in Issue Identified but Eliminated from Detail Analysis.

2. **Comment Summary:** Carbon sequestration is benefitted by forest management. Prescribed fire smoke is less hazardous than wildfire smoke.

   Comment Response: Thank you for your comment. The following text has been added to Section 3.2.3 of the EA: The proposed action is expected to result in a net carbon storage increase compared to the no action alternative. While an initial forest carbon loss is expected immediately following treatment (1-10 years), a longer-term (20 – 50 years) forest carbon gain is expected as tree vigor and forest health improve over pre-treatment condition. As mentioned in Lippke et al.,2004, "The greatest rate of carbon storage occurs in the first 50 years of growth and then the rate lessens over time… from empirical data there is little if any increase beyond 120 years" (Lippke et al., 2004a). Additionally, forest products such as building materials continue to store carbon while the forest carbon stores increase through vigorous growth, having an additive and compounding effect on carbon sequestration through time (OFRI 2006).

   The anticipated reduction in wildfire risk from the proposed action also reduces the potential carbon emissions from to large-scale mega-fires. As stated in Krankina and Harmon 2006: "Restoring forest resilience to extreme disturbance events through thinning to reduce stocking levels can generate wood-based products or biomass energy as byproducts of forest treatments while decreasing the likelihood that large-scale future disturbances would create both immediate and long-term carbon releases through fire or decomposition." Lower stocking and diverse species tend to reduce fire severity resulting in more trees surviving the fire and hence more carbon stored than if a fire kills most or all standing trees (OFRI 2006). The proposed action is also expected to have a beneficial impact on greenhouse gas emissions by producing wood for building materials and by using wood as fuel instead of fossil fuels (OFRI 2006).

3. **Comment Summary:** How does Climate Change effect the efficacy of the proposed treatments.

   Comment Response: Thank you for your comment. The following has been added to the EA, Section 3.2.3: While the exact impacts of climate change are unknown, current modeling suggests that the local climate will generally become warmer and drier over the next several decades (https://climatena.ca/). Current science suggests that specific individual tree species will be more likely to survive these changes, and generally more drought tolerant species will be among the best suited for the anticipated changes

(https://specieshabitattool.org/spht/). With those changes, increased frequency of large-scale disturbances such as mega-fires, insect and disease outbreaks are expected to cause tree mortality in susceptible and stressed forest stands.

Through implementation of the proposed action, the project is designed to improve forest health and resiliency at a landscape scale. These improvements to forest health and resiliency through promotion of stand diversity and individual tree vigor, as well as site specific reforestation, will produce forests which are best suited to survive the anticipated changes in climate (UC-ANR. 2017). As stated in Adapting Forests to Climate Change: To help your mixed-conifer forest adapt to climate change, consider ways to encourage resilience to drought, fire, and insect attacks. Strategies include thinning to reduce competition, managing for species diversity, and selecting seedlings that are likely to survive a warmer, drier climate (UC-ANR. 2017).

4. **Comment Summary:** Does the project align with President Biden's executive orders and current CEQ guidance on climate?

   Comment Response: Thank you for your comment. An effect analysis of Greenhouse Gasses and climate change has been added to the EA section 3.2.3.

   President Biden's Executive Order 14072 states "It is the policy of my Administration, in consultation with State, local, Tribal, and territorial governments, as well as the private sector, nonprofit organizations, labor unions, and the scientific community, to pursue science-based, sustainable forest and land management; conserve America's mature and old-growth forests on Federal lands; invest in forest health and restoration; support indigenous traditional ecological knowledge and cultural and subsistence practices; honor Tribal treaty rights; and deploy climate-smart forestry practices and other nature-based solutions to improve the resilience of our lands, waters, wildlife, and communities in the face of increasing disturbances and chronic stress arising from climate impacts".

   The use of NRV is described Section 3.1 of the EA: NRV was developed by using "Historical Vegetation of Montana" (Losensky 1997) as a basis for understanding ecologically sustainable conditions. Managing forest ecosystems within their natural range of variability (NRV) will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). Current conditions were determined by using data collected within the244laning area (BLM forest inventory 2014 – 2015 as well as subsequent field visits). The concept of managing forests to move towards or remain within their NRV was utilized to create desired conditions for the Clark Fork Face planning area. Current conditions versus desired conditions for each Habitat Type Group (HTG) are displayed in section 2.1 of the EA. Section 3.2.3 Environmental Effects – Alternative 2 describes in detail how the proposed treatments would improve forest health and resiliency, reduce fire severity and shift the stands towards the midpoint of NRV.

Wildland Urban Interface (WUI), Fire and Fuels

1. **Comment Summary:** Does the BLM use the HFRA communities – at – risk definition? Note that Drummond and Clinton are "At Risk" communities based on HFRA. Please Provide density of human residents within 1.5 miles.

   Comment Response: Thank you for your comment. The definition of communities-at-

risk and wildland urban interface (WUI) as written in the HFRA defines WUI as areas within 1.5 miles of a community-at-risk in areas that do not have a Community Wildfire Protection Plan (CWPP). As stated in the EA, the planning area contains three counties which each have their own Community Wildfire Protection Plan in which their communities at risk and associated WUI have been identified. These county level CWPPs are directly tied to the Healthy Forests Restoration Act of 2003 (HFRA).

Section 3.2.1 of the document as well as Map 9.9 indicate the priority areas as identified by the Montana Forest Action Plan and Wildfire Adapted Missoula and the proposed treatments are in line with the 2018 Missoula County CWPP. Fuels Management is proposed near the community of Clinton in Wallace Creek. See Proposed Action Map 9.1.

2. **Comment Summary:** How does commercial logging reduce threat of forest fires?

   Comment Response: Thank you for your comment. All proposed harvesting outside current lynx habitat will be followed by prescribed burning, which has been shown to reduce wildfire risk. See the Effect Analysis of the document, Section 3.2.3 for a complete analysis of this concern.

3. **Comment Summary:** The BLM should consider wildfire studies such as Baker, 2015 and DellaSalla et al 2022.

   Comment Response: Thank you for your comment. Baker, 2015 states, "that high severity fire is generally operating at or below historical rates" and that "the ecological importance of large, infrequent, and often severe natural disturbances in structuring historical landscapes and maintaining their biological diversity is well established". Further he states, "the best approach for high severity fire is likely though wildland fire use, managed by professional fire personnel, with restoration and maintenance of high-severity fire within historical rates and patterns as a goal".

   Restoring high-severity fire is not an objective of this project (See Section 1.1 Purpose and Need) and this landscape does not lend itself well to managed wildfires (See discussion of FMZ 1, Section 2.1). There is no big block of roadless or wilderness, but instead a very fragmented ownership (See Appendix D. Maps). The bulk of the ownership is private and state (See Section 1.0), and DNRC provides fire protection, and due to the objectives of private landowners and DNRC, DNRC operates under a full suppression strategy for fire. BLM designated these lands as FMZ1 in the recently completed Missoula Field Office Resource Management Plan (USDI-BLM 2021) which equates to a full suppression strategy for wildfires. This is due to the scattered nature of BLM lands and how they are intermingled with private and DNRC. Baker states, "Land managers and the public can reduce fire risk near housing, infrastructure, and valuable resources to maximize area available for wildland fire use across adjoining lands". The CFF treatments are designed to do just that, to reduce fire risk near housing, infrastructure, and valuable resources.

   DellaSalla et al, 2022 states that "land managers would work with individual wildfires for ecosystem benefits whenever safety possible" and that "This means monitoring fires in remote areas, loose herding, confinement, and full suppression strategies where necessary". Again, most of the ownership within the planning area is private and state, all under DNRC (state) protection, under a full suppression strategy. The BLM

designated their lands in the area as FMZ1, a similar full suppression strategy due to the scattered ownership (See FMZ map in Appendix D). This is not a landscape with large roadless or wilderness areas that do help with more flexible wildland fire management like DellaSalla et al and Baker suggest. While the treatments do include prescribed burning, we will not repeat those burns on a short rotation for maintenance, but rather every 20 years (approximately).

4. **Comment Summary:** The BLM should consider the impacts of the policy to replace natural fire with logging and prescribed burning.

   Comment Response: Thank you for your comment. Although policy analysis is outside the scope of the purpose and need for this project, we have analyzed the effects of historic large scale fire suppression in Section 3.2.1.

   Regarding management in light of those effects, as described in that section, the 2021 Missoula RMP (USDI-BLM 2021) established two Fire Management Zones (FMZ). The FMZ classification is used to guide and prioritize wildfire response and fuels management. FMZ 1 is characterized as having a high instance of values at risk, or areas at high risk of catastrophic fire due to current vegetation conditions, where an unplanned wildland fire is likely to cause negative effects. These lands are within and adjacent to the WUI, intermingled with private and state lands, and contain important cultural, recreational, economic, or biological resources. FMZ 2 is generally further from values at risk, where wildland fire is desired to manage ecosystems, but constraints (such as private inholdings) limit the use of wildland fire. Within FMZ 2, the full range of fuels treatments including mechanical, manual and prescribed fire on lands in this category will be important to the success of wildland fire management. Most of the BLM lands in the planning area are in FMZ 1 (22,601 or 96%), while 1,064 acres or 4% are in FMZ 2 (See Figure 3 in section 2.1 and Appendix D, Map 9.5).

   Therefore in 96% of the planning area an unplanned wildland fire is likely to cause negative effects, and in the remaining 4% wildland fire is desired to manage ecosystems, but constraints (such as private inholdings) limit the use of wildland fire.

5. **Comment Summary:** The BLM should consider the increased fire potential associated with lop and scatter slash treatment.

   Comment Response: Thank you for your comment. The description of the Thinning proposed action in Section 2.1 has been modified to include the following: Trees would be manually cut with chainsaws to site specific specifications. Where Fuels Management is not an additional objective (often treatment units have multiple objectives, see Section 2.1 for discussion), thinned small trees would be lopped and scattered or piled so slash does not exceed a depth of 18 inches. This would result in a short-term increase in the fuel loading and associated wildfire risk. In the longer term, once the red needles fall from the thinned slash and snow loading compresses the stems (generally after the first full winter), the wildfire risk would be reduced below pretreatment levels by the reduction of ladder fuels and interlocking crowns. In proposed Thinning units where Fuels Management is an additional objective, thinning slash will be piled for burning, chipped, masticated or similarly treated so there is no increase in in wildfire risk immediately following treatment.

6. **Comment Summary:** The MT DNRC has fire suppression responsibility (for the

planning area) and, thus, a high interest in this project. The DNRC is also planning and performing similar projects in the area and supports the proposed action. The planned actions of other agencies within the Project Area are described in Appendix H. Reasonably Foreseeable Future Action.

Comment Response: Thank you for your comment. Section 3.2.1 of the document describes the Fire Suppression history in the project area including the DNRCs current role. Coordination with the DNRC and other agencies is described in Section 4 above.

7. **Comment Summary:** Please disclose when and how the BLM decided to suppress natural wildfire.

   Comment Response: Thank you for your comment. The planning area is divided between two Fire Management Zones (FMZ) as established by the 2021 Missoula RMP (USDI-BLM 2021) which guide and direct management with regard to wildfire (See Section 2.1 of the EA). Section 3.2.1 of the EA describes the fires suppression history of the planning area.

8. **Comment Summary:** The BLM should consider science on fire cycles.

   Comment Response: Thank you for your comment. Fire cycles are incorporated in the development of the Desired Condition per Habitat Type Group. Appendix G. of the document details the Natural Range of Variability, Fire Regime, Current Condition and Desired Condition by Habitat Type Group.

9. **Comment Summary:** The BLM should consider "prevailing winds" (SW-WSW) during burning season and how it will impact adjacent landowners. Concerned about Rx burns getting away.

   Comment Response: Thank you for your comment. As currently proposed, treatment will proceed west to east within the planning area. The decision to start treatments on the west side was based on access. The BLM currently has legal access to proposed treatments that area, while other areas we are working on gaining access.

   All prescribed burns are planned using the NWCG Standards for Prescribed Fire Planning and Implementation. Local weather, adjacent ownerships, and adjacent fuels are all taken into consideration when planning for a prescribed burn to mitigate any impacts to adjacent landowners. Additionally, Remote Automated Weather Stations (RAWS) will be used during prescribed burn implementation to monitor and assess winds.

10. **Comment Summary:** The BLM should consider air pollution from burning piles. Concern over prescribed burning caused air pollution.

    Comment Response: Thank you for your comment. Section 2.1, the Prescribed Burning proposed treatment description has been updated to include: Prescribed burning operations would follow procedures and standards developed by the Montana Idaho Airshed Group to ensure adequate smoke dispersal in order to prevent deterioration in air quality. These procedures and standards are considered Best Available Control Technology, as determined by the Montana Department of Environmental Quality (MDEQ) which regulates open burning in Montana. Appendix F. Design Features for the Proposed Action has been updated to include the following: Follow RMP direction: AC-MA-2. For prescribed burns, continue to participate in the Montana Idaho Airshed

Group to manage smoke impacts and coordinate with the Montana Department of Environmental Quality (MDEQ).

11. **Comment Summary:** The BLM should consider wildfires since 2000; describe fire history in the area. Is map 9.10 missing the 2017 fires?

    Comment Response: Thank you for your comment. See fire history discussion in section 3.2.1 in EA, as well as fire history map in Appendix D. While the fire season of 2017 was a very active one in the southwest zone of the Northern Rockies (Lolo Peak, Rice Ridge, Liberty, etc) there were no large fires in the CFF planning area. There were several small fires, but they were extinguished at less than one acre. The Sapphire Complex occurred in 2017 but was south of the planning area. The project record has been updated to include wildfire data for 2017.

12. **Comment Summary:** The BLM should consider the Home Ignition Zone (HIZ), and specifically landowner's responsibilities with construction and re-construction. Please clarify that federal work is not occurring within the HIZ, but that the BLM is partnering with State, County and private organizations to accomplish work on non-federal land in the planning area. Recognize that private landowners need to perform fuels management treatments as well.

    Comment Response: Thank you for your comment. Section 3.2.1 of the document has been updated to include the following: To increase the efficacy of fuels treatments proposed for BLM lands in the planning area, the BLM has also moved to address the hazards present on private lands and adjacent to homes. As of summer 2022, the BLM Western Montana District entered into a Cooperative Agreement with the MT DNRC wherein Community Assistance funds are made available for fuels reduction work on private lands in the CFF planning area (as well as other areas under other agreements). The Agreement term is five years with option to extend, and it is currently funded at $100,000 with opportunity up to $500,000. In November of 2022, the MT DNRC Forestry Assistance Bureau began targeted outreach, sending flyers and conducting site visits in the Wallace Creek drainage near the community of Clinton, MT. As of February 2023, 6 homeowners in that community and expressed interest or intent to utilize the funding for fuels reduction work on their land. It is the intent of the BLM and MT DNRC to keep the targeted outreach and progressing through the planning area one community or drainage at a time until all landowners in the planning area have been contacted, and it is recognized that this may require additional agreements in the future. By utilizing the Cooperative Agreement with the MT DNRC and providing Community Assistance funds, the BLM is facilitating and providing opportunity for fuels reduction on private lands across ownership boundaries.

13. **Comment Summary:** The BLM should consider the Jack Cohen fire ignition information and focus on the HIZ (a.k.a. Structure Ignition Zone) rather than fuels treatments on federal forest lands.

    Comment Response: Thank you for your comment. As mentioned in the EA section 3.2.1, reducing wildfire risk to communities is not a one sized fits all approach. We can't do one action/treatment to reduce risk, but rather multiple actions because multiple things influence wildfire risk. Reducing wildfire risk can be done by addressing nine different things: land use planning, evacuation and readiness, equitable risk reduction, smoke ready, prevent ignitions, ignition-resistant homes, response, hazardous fuels management, and recovery and rebuilding (wildfirerisk.org). The importance and amount of each one

of these of course depends on where you are and current situation, but they all matter. We need them all to reduce wildfire risk to communities.

Each entity (private, state, local, federal) that is involved in a particular landscape has authorities and jurisdiction to address some of each of these, and of course the more we work together to address these the better. For example, land use planning in the CFF so that people build in a certain fire-resistant way is a Missoula County action/responsibility. Ignition-resistant homes is a private individual responsibility, and response is a state (MT DNRC) responsibility. Reducing hazardous fuels on BLM jurisdiction is the BLM's responsibility. The collective we (County, State, Federal, Private, NGO) work together to address all of these items and to make sure the right hand is talking to the left hand on numerous boards, committees, and groups. While the home ignition zone is important to reduce wildfire risk, it is only one treatment, and alone will not reduce wildfire risk to communities. We need a combination of the nine items. The BLM has no authority or jurisdiction to implement home ignition zone treatments on private property. That is up to the homeowner, and Missoula County to implement zoning.

To increase the efficacy of fuels treatments proposed for BLM lands in the planning area, the BLM has also moved to address the hazardous fuels present on private lands and adjacent to homes. As of summer 2022, the BLM Western Montana District entered into a Cooperative Agreement with the MT DNRC wherein Community Assistance funds are made available for fuels reduction work on private lands in the CFF planning area (as well as other areas under other agreements). The Agreement term is five years with option to extend, and it is currently funded at $100,000 with opportunity up to $500,000. In November of 2022, the MT DNRC Forestry Assistance Bureau began targeted outreach, sending flyers and conducting site visits in the Wallace Creek drainage near the community of Clinton, MT. As of February 2023, 6 homeowners in that community and expressed interest or intent to utilize the funding for fuels reduction work on their land. It is the intent of the BLM and MT DNRC to keep the targeted outreach and progressing through the planning area one community or drainage at a time until all landowners in the planning area have been contacted, and it is recognized that this may require additional agreements in the future. By utilizing the Cooperative Agreement with the MT DNRC and providing Community Assistance funds, the BLM is facilitating and providing opportunity for fuels reduction on private lands across ownership boundaries.

In reference to The Missoulian article from January 20th, 2022, the BLM is not part of the Forest Service's wildfire crisis strategy. In 2019 in a joint proclamation the City and County made clear their intent for developing a fire adapted landscape. This includes cross boundary fuels treatments on all jurisdictions.

14. **Comment Summary:** The BLM should consider implementing shaded fuel breaks along some of the major ingress and egress roads.

Comment Response: Thank you for your comment. The development of the proposed action included analysis of average stem height and diameter, crown closure, access via existing and proposed roads, habitat type, proximity to major access routes and private improvements and similar. Additional considerations included management direction (See the 2021 Missoula RMP (USDI-BLM. 2021) and corresponding Biological Opinion (USDI-FWS 2020). The prosed action as stated represents the BLM’s best efforts to achieve the Purpose and Need while pursuing the BLM mission for sustained yield and

multiple use.

Adjacent Landowners.

1. **Comment Summary:** Figure 14 is difficult to interpret.

   Comment Response: Thank you for your comment. The document has been updated with improved photo quality and the structures in the 2022 photo have been circled.

2. **Comment Summary:** People should stop building in the forest if we are worried about fires.

   Comment Response: Thank you for your comment. Private land development is outside of the scope of this project.

3. **Comment Summary:** Supports the project as Wallace Creek / W. Ashby Creek are year-round residences for many people, and the same with Bear Gulch and Rattler Gulch. Could organize a tour to see residences and meet homeowners in the area.

   Comment Response: Thank you for your comment. We appreciate the offer; the BLM would possibly participate in, but would not organize or provide tours on private property. We would consider, however, offering implementation tours on BLM managed lands for any members of the public to understand the forest vegetation conditions and wildland fire severity connection.

4. **Comment Summary:** Support for road maintenance and improvement associated with the project because private landowners and locals have taken that on themselves with mixed results.

   Comment Response: Thank you for your comment. The BLM is currently planning a multipronged approach to accomplish road maintenance and improvement in the project area, via multiple contracting mechanisms. Revenue from the sale of forest products as well as Bipartisan Infrastructure Legislation and Inflation Reduction Act funding are a few of the funding sources that the BLM intends to use to accomplish this important work.

5. **Comment Summary:** The BLM should consider harvests away from private land.

   Comment Response: Thank you for your comment. The Purpose and Need of the project is described in Section 1 of the document, and the Timber Harvest with Prescribed Fire proposed action is described in Section 2.1. Avoiding treatments near private lands would not meet the purpose and need of the project, number one of which is to protect life, property and firefighter safety in and near the wildland-urban interface and promote resilience to wildfire by reducing forest fuel loading and breaking up homogeneous stand conditions.

6. **Comment Summary:** Concerned that road maintenance will cause an increase of use.

   Comment Response: Thank you for your comment. As stated in the EA Section 2.1, no new open motorized routes are proposed, the existing open routes that are available for motorized use will remain open. Vehicle traffic on unmaintained and degraded roads represents a safety hazard to the users as well as an increased likelihood of stream

sedimentation due to failed road drainage. Using the roads for treatment without maintaining them would fail to meet management direction (USDI-BLM. 2021) as well as our obligations under additional guidance such as the Best Management Practices (MT-DNRC. 2015). Increased road maintenance and road improvements are expected to benefit all users, residential and recreational but increased use is not a goal or objective of this project.

7. **Comment Summary:** Support for the project, wishes to discuss specific roads in the planning area.

   Comment Response: Thank you for your comment. The BLM has spoken directly to the commentor about his concerns and will continue to communicate regarding these roads that he uses to access his residence.

Grazing

1. **Comment Summary:** The BLM should monitor grazing activities impacts to vegetation diversity, soil compaction and stream bank stability.

   Comment Response: Thank you for your comment. Sections 1.5 Issues Identified but Eliminated from Further Analysis has been updated with the following:

   Grazing within the planning area would continue with the likely effect of the treatments being more forage availability 1-5 years after treatment. No change in grazing allotments or Animal Unit Months (AUMs) is proposed with either alternative and so while reduced forest stocking will likely allow more grass and forb growth due to increased sunlight and water availability in the lower canopy layers, the number of AUMs would remain unchanged leading to more forage availability for wildlife. Grazing does have the effect of reducing grass biomass during their season of use (typically May – Oct.) which would have an additive effect of reducing fuel loading in the planning area and thereby working in concert with the proposed action to reduce wildfire risk.

   Grazing decisions are not a component of the Purposed and Need of this project and not within the scope of this project.

2. **Comment Summary:** The BLM should disclose past, current, and reasonably foreseeable grazing allotments.

   Comment Response: Thank you for your comment. See Chapter 3 Affected Environment, which discloses past and current conditions.

3. **Comment Summary:** The BLM should disclose how livestock grazing may, cumulatively, impact vegetation including spread of weeds.

   Comment Response: Thank you for your comment. The Cumulative Effects Section 3.2.3.1 has been updated to include the following:

   Grazing within the planning area would continue with the likely effect of the treatments being more forage availability 1-5 years after treatment. No change in grazing allotments or Animal Unit Months (AUMs) is proposed with either alternative and so while reduced forest stocking will likely allow more grass and forb growth due to increased sunlight and water availability in the lower canopy layers, the number of AUMs would remain unchanged leading to more forage availability for wildlife. Grazing does have the effect

of reducing grass biomass during their season of use (typically May – Oct.) which would have an additive effect of reducing fuel loading in the planning area and thereby working in concert with the proposed action to reduce wildfire risk.

Additionally, Project Design Features specific to Noxious Weeds have been added (See section 11.0.18) which include among other things:

- Require washing and inspection of all heavy equipment prior to entry onto federal lands.
- Require weed treatments along haul routes and main access routes prior to and following vegetation treatments to the greatest extent possible.

Weed transport via grazing livestock is a possibility, but through implementation of the design features incorporated into this proposed action it is not believed that the proposed action will increase that potential. Grazing decisions are not a component of the Purposed and Need of this project and thus not within the scope of this project.

4. **Comment Summary:** The BLM should disclose how livestock grazing may, cumulatively, impact grizzly bear and Canada lynx conflicts in the area.

   Comment Response: Thank you for your comment. All current allotment leases north of I-90 contain grizzly bear terms and conditions as required by NCDE Conservation Strategy. No change is grazing, or livestock use is proposed. See the 2021 Missoula RMP (USDI-BLM. 2021) and corresponding Biological Opinion (USDI-FWS 2020). Grazing decisions are not a component of the Purposed and Need of this project and thus not within the scope of this project.

Increased Recreation

1. **Comment Summary:** Given that mountain bikes would be able to utilize the new proposed roads, would this include ebikes? Please disclose the impacts to grizzly bear-human encounters based on increased mountain bike use this in the area.

   Comment Response: Thank you for your comment. Ebikes are not currently allowed on roads that are closed to motorized use and no new motorized routes are proposed. See Section 1.5 Issues Identified but Eliminated from Further Analysis for a discussion of mechanized use associated with the proposed roads. Under Alternative 2, proposed road new segments range from .07 to 1.32 and average .5 miles. These new road spurs are not expected to increase mountain bike use in the area as there are better mountain biking experiences nearby and no new routes or loops are proposed. Further, design features specified in section 2.2 would require all proposed new permanent spur roads would be physically closed to public motorized use immediately upon construction with monitoring and enforcement components. Under Alternative 2b (sub-alternative), no temporary or permanent roads would be constructed.

2. **Comment Summary:** Snowmobiles are currently allowed in the project area. Snowmobiles would be allowed to use the 19 miles of proposed permanent roads, which would likely increase risk of disturbance to denning grizzly bears including possible den abandonment and the threat of lethal avalanches.

   Comment Response: Thank you for your comment. No change in snowmobile access is proposed. Per current management direction, snowmobiles are already allowed to use

much of the project area on or off roads. In Area Designation 4, snowmobiles are not allowed at all. Under Alternative 2, proposed new road segments in Area Designation 4 (See the Missoula Field Office 2020 Travel Map) will remain closed to snowmobiles. The proposed action is not expected to increase levels of recreational use, subsequently, increased effects to grizzly bears are not reasonably certain to occur. Under Alternative 2b (sub-alternative), no temporary or permanent roads would be constructed.

3. **Comment Summary:** Snowshoers and backcountry skiers would have access to the new proposed road miles, thus higher elevations, and more wolverine habitat. The BLM should analyze the effects of widely spaced trees and closed roads to both non-motorized and motorized recreational use.

   Comment Response: Thank you for your comment. Impacts due to potential increased recreational use are discussed under the following headings within Section 1.5 Issues Identified but Eliminated from Detailed Analysis:

   - *How would permanent road construction provide access to the public?*
   - *How would the new, permanent roads affect mechanized use in the area?*

   As stated in that section, recreational use is not expected to increase due to the proposed action (Alternative 2), including proposed road development. The proposed new road segments will not become part of the designated snowmobile trail system or any designated trail system - motorized or non-motorized through this project. None of the proposed new road segments will remain open to motorized use - aside from snowmobiles. Snowmobiles can currently travel cross country in much of the planning area, although in Area Designation 4 (See the Missoula Field Office 2020 Travel Map), snowmobiles are not allowed at all. These travel designations will not change with this project. Under Alternative 2b (sub-alternative), the BLM would not construct any new temporary or permanent roads.

   No new recreation developments are proposed through this project. The planning area is not a destination for snowshoeing and backcountry skiing as there are better destinations nearby (Blue Mountain Recreation area, Pattee Canyon recreation area, the Rattlesnake National Recreation Area and Lubrecht Experimental Forest all provide groomed ski and snowshoe trails within an hour's drive of the project area). Cross-country skiers do utilize the Garnet Range Road currently, but the proposed road new segments would dead-end and only range from .07 to 1.32 mils, averaging .5 miles. These new road spurs are not expected to increase cross-country skier use as there will be no loops or new routes (proposed spurs would only slightly lengthen currently available routes).

   Aside from visitors to Garnet Ghost Town and the rock climbers and students using the Limestone Cliffs Special Recreation Management Area (SRMA), the typical recreationists accessing the project area are hunters and snowmobilers. There also are some UTVers using existing, open roads and some dispersed camping along open roads. The recreational use of the area is not expected to increase due to the proposed project, and the types of recreation are not expected to change due to this proposed project. The BA for this project concluded: "The proposed action is not expected to change levels of recreational use or create further barriers to dispersal. Wolverine foraging and denning would not likely be impacted." Further, the summary of the five-factor analysis for North American wolverine (USDI Fish and Wildlife Service 2013), concluded, dispersed Recreation (e.g., snowmobiling and heli-skiing) were not identified as a threat to the continuous wolverine Distinct Population Segment (DPS).

4. **Comment Summary:** Concern that new proposed roads would lead to an increase in recreational vehicle use.

   Comment Response: Thank you for your comment. Under the Proposed Action/Alternative 2, no increase in motorized recreational use is anticipated due to the new roads as they will be gated and/or closed after the project implementation. Snowmobiles can already access most of the areas, off road. Adding new roads should not attract more or new snowmobile use as these roads aren't part of the snowmobile trail system and snowmobiles can already access and use the project area in most places. In Area Designation 4 (See the Missoula Field Office 2020 Travel Map), snowmobiles are not allowed at all. Travel Area designations are not within the scope of this project and are not proposed to change. Under Alternative 2b (sub-alternative), no increase in motorized recreation use would be anticipated as no new roads would be constructed.

5. **Comment Summary:** The BLM should provide outdoor recreation and motorized use opportunities along any roads created. Consider an alternative where the 6 miles of temp roads are permanent for recreation use. Recreation is valuable to local economies.

   Comment Response: Thank you for your comment. Limiting new permanent road construction is in alignment with current management direction (See the 2021 Missoula RMP (USDI-BLM. 2021) and corresponding Biological Opinion (USDI-FWS 2020). Proposed roads in the project were evaluated for removal after use (the temporary designation) based on this and in order to minimize effects to wildlife. Evaluation criteria for road segments included road segment length, side slope, other roads or areas accessed and long-term management needs. Building roads for increased recreational use and access is not within the Purposed and Need of the project.

   The planning area supports multiple indirect recreational opportunities such as walk in access and hunting. Improving and providing new recreational opportunities is not within the scope of this proposed project.

Economic Impacts

1. **Comment Summary:** Support for the project: sawlogs will be used by local mills to produce high quality lumber used to build homes.
   Consider the importance of raw materials from BLM lands to the sawmills within the state for continued operations. Raw materials from BLM (and other agencies) supports the wood products industry which provides 12-15 direct and indirect jobs created for every 1 MBF of timber harvested.

   Comment Response: Thank you for your comment. The EA included an economic analysis of project impacts (see EA Section 3.3).

2. **Comment Summary:** The BLM should consider a maximum commercial treatment of candidate stands within the 19k acres.

   Comment Response: Thank you for your comment. The development of the proposed action included analysis of average stem height and diameter, crown closure, access via existing and proposed roads, habitat type, proximity to major access routes and private improvements and similar. Additional considerations included management direction (See the 2021 Missoula RMP (USDI-BLM. 2021) and corresponding Biological Opinion

(USDI-FWS 2020). The prosed action as stated represents the BLM's best efforts to achieve the Purpose and Need while pursuing the BLM mission for sustained yield and multiple use.

3. **Comment Summary:** The BLM should avoid firm operating instructions rendering project infeasible or difficult. Use descriptive end-results rather than prescriptive restrictions.

   Comment Response: Thank you for your comment. The development of the proposed action included analysis of harvesting practices commonly used in the region. Wherever possible, end-state results and objectives are stated rather than requiring specific harvesting equipment. Site specific implementation notes are available the project record.

4. **Comment Summary:** The BLM should examine days that operations and haul are shut down due to hunting seasons and other outdoor recreation. Such restrictions make operations much more difficult and expensive.

   Comment Response: Thank you for your comment. The Project Design Features (Appendix F.) have been carefully crafted to strike a balance of mitigating potential negative impacts, meeting management direction, and maintaining operational feasibility. The BLM is acutely aware of the need to maintain operational feasibility in order to achieve project objectives and agency obligations.

5. **Comment Summary:** The BLM should decommission road segments where risk outweighs access value. Supports BMP upgrades to existing roads. Consider accessibility to support fire suppression with roads.

   Comment Response: The Purpose and Need as stated in Section 1.1 of the EA does not include Travel Management determinations, and as such existing road obliteration is not analyzed. No new open motorized routes are proposed, the existing open routes that are available for motorized use will remain open. Road segments that are not needed for long term management and are proposed as temporary will be removed and or obliterated after use. Site specific implementation notes are available in the project record.

Coordination with Other Agencies.

1. **Comment Summary:** Did BLM coordinate with MT FWP?

   Comment Response: Thank you for your comment. Section 4.0 of the EA details the consultation with other agencies, Section 3.4.1 describes specific conversations with MT-FWP regarding the project. Additional documentation is available in the project record.

2. **Comment Summary:** Did BLM coordinate with MT DEQ?

   Comment Response: Thank you for your comment. See the 2021 Missoula RMP (USDI-BLM. 2021) and corresponding Biological Opinion (USDI-FWS 2020). The Missoula Field Office manages for water quality in cooperation with Montana DEQ for sampling, monitoring, and water quality determinations in compliance with the Clean Water Act. BLM and MT DEQ operate under an MOU that BLM will not contribute to water quality impairment in 303d or TMDL waterbodies; BLM reviews specific project

areas for presence of impaired waterways and evaluates if BLM is further impacting water quality. These water quality evaluations are completed jointly with Properly Functioning Condition assessments following BLM Technical Reference 1737-15 and implementation BMP project reviews following MT DNRC BMP Handbook (2006).

3. **Comment Summary:** Did BLM consult with the SHPO? Was the BLM in compliance with the HPA?

   Comment Response: Thank you for your comment. See Section 1.5 Issues Identified but Eliminated from Further Analysis and Appendix F. Design Features for the Proposed Action. The BLM has developed a Programmatic Agreement that is currently under review by SHPO and the tribes. According to the Programmatic Agreement it has been determined that a phased identification and evaluation of historic properties, determinations of effect, mitigations and consultation will be carried out after issuance of the decision record, but prior to authorizing implementation. All affected areas according to the proposed action will have class III inventories conducted prior to project implementation. Historic / prehistoric / cultural sites and properties would be avoided during implementation.

4. **Comment Summary:** The BLM should disclose BMP compliance.

   Comment Response: Thank you for your comment. As stated in Appendix F. of the EA, Project Design Features for the Proposed Action include following Forestry BMPs for Montana. Best Management Practice effectiveness is determined via MT DNRC BMP monitoring reports (MT DNRC Vessar et al. 2022); this monitoring shows that BMPs are applied correctly 96% of the time and were 96% effective in reducing stream sedimentation and erosion on federal lands (Vessar et al 2022).

5. **Comment Summary:** The BLM should disclose a record of compliance with additional monitoring set forth DN/FONSIs and RODs

   Comment Response: Thank you for your comment. Section 1.3 of the EA describes Land Use Plan Conformance.

6. **Comment Summary:** The BLM should disclose VRM impacts; define terms.

   Comment Response: Thank you for your comment. See Section 1.5 Issues Identified but Eliminated from Further Analysis and Appendix F. Design Features for the Proposed Action. The CFF proposed action area is entirely Visual Resource Management (VRM) Area IV as designated by the RMP (UDSI-BLM 2021). As stated in the RMP Record of Decision, Section 11.2.11: In VRM Class IV - Every attempt should be made to minimize impact of activities through careful location, minimal disturbance and repeating the basic elements of form, line, color and texture found in the predominant landscape. Impact Analysis Worksheet is available the Project Record.

7. **Comment Summary:** The BLM should disclose timeline for implementation.

   Comment Response: Thank you for your comment. As stated in section 2.1 of the EA, implementation of the proposed action is expected to occur over the next 10 - 15 years.

8. **Comment Summary:** The BLM should disclose funding source (for proposed treatments).

Comment Response: Thank you for your comment. Funding for implementation may come from multiple sources and is not within the scope of this analysis or decision.

9. **Comment Summary:** Excited to see continued coordination with neighboring agencies and NGOs.

Comment Response: Thank you for your comment. Section 4.0 describes the coordination with neighboring landowners and agencies. The BLM is committed to continuing this communication and coordination throughout the proposed project.

Outside the Scope of the Project

1. **Comment Summary:** The BLM should disclose and address the concerns expressed by the ID Team in the draft Five-Year Review of the RMP regarding the failure to monitor population trends of MIS, the inadequacy of the Forest Plan old growth standard, and the failure to compile data to establish a reliable inventory of sensitive species on the Forest;

   Comment Response: Thank you for your comment. The RMP was signed in 2021 (UDSI-BLM 2021). There is no Forest Plan as that is a US Forest Service management plan. There has not been a 5-year review completed yet. This comment is inaccurate and will not be considered in further detail.

2. **Comment Summary:** How does project comply with the Roadless Rule?

   Comment Response: Thank you for your comment. The US Forest Service roadless rule does not apply to BLM-administered lands. Thus, this comment will not be considered in further detail.

3. **Comment Summary:** Commenter includes provisions from the Scratchgravel Hills EA (Butte Field Office); Analyze the effect of the increase bike use on small animals and plants next to the trail.

   Comment Response: Thank you for your comment. The Scratchgravel Hills Recreation Management Area Environmental Assessment is within the Butte Field Office. It is a recreation management plan addressing public access. The Clark Fork Face project is within the Missoula Field Office and it does not include recreation or public access to travel management as part of its purpose and need. The Scratchgravel project is outside of the scope of analyses for the Clark Fork Face project and, thus, will not be considered in further detail.

4. **Comment Summary:** The BLM should analyze the effect of the project on Head Lane.

   Comment Response: Thank you for your comment. The Clark Fork Face project is not adjacent to the Head Lane property owners in Helena, Montana. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

5. **Comment Summary:** The BLM should discuss Director Stone-Manning's comments on the Missoula RMP being "zero protection for the last remaining roadless lands in the Garnet Range…"

   Comment Response: Thank you for your comment. As described in Section 2.1 of the

EA, no currently roadless parcels of BLM managed land are proposed for road building. Director Stone-Manning's comments on the RMP are outside the scope of the project.

6. **Comment Summary:** The commentor disagrees with the Purpose and Need of the project.

   Comment Response: Thank you for your comment. The BLM maintains the ability to write its Purpose and Need statements for projects. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

7. **Comment Summary:** Adjacent state and private lands lack regulatory mechanisms; No mechanisms to prevent road building etc.

   Comment Response: Thank you for your comment. The BLM has no authority on adjacent ownership. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

8. **Comment Summary:** Increased trapping seasons will impact wolverine.

   Comment Response: Thank you for your comment. The BLM does not manage trapping or hunting seasons. That is within the jurisdiction of MT FWP. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

9. **Comment Summary:** The BLM should protect the Garnet Mountains roadless lands as Wilderness by the Northern Rockies Ecosystem Protection Act.

   Comment Response: Thank you for your comment. The lands within the planning area are not designated wilderness or even classified as Wilderness Study Areas. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

10. **Comment Summary:** The BLM should manage for wildlife and recreation.

    Comment Response: Thank you for your comment. BLM management is governed by FLPMA for sustained yield and multiple use. See the 2021 Missoula RMP (USDI-BLM. 2021). The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

11. **Comment Summary:** The BLM should change the state regulations for homeowners (building in the WUI).

    Comment Response: Thank you for your comment. Private land management and development are outside of the jurisdiction of the BLM. The comment is outside of the scope of the EA and, thus, will not be considered in further detail.

12. **Comment Summary:** The BLM should rename the project.

    Comment Response: Thank you for your comment. We have met with the individual and explained the origin of the planning area name. No further consideration necessary.

Wildlife

1. **Comment Summary:** The BLM should use best available science.

   Comment Response: Thank you for your comment. The BLM has used best available science in all cases during analysis consultation with the USFWS. If new information, reveals the effects of the action may affect TES species or critical habitat, in a manner or extent not previously considered, the BLM will reinitiate consultation per 50 CFR 402.16 Reinitiation of Consultation.

2. **Comment Summary:** The BLM should describe existing conditions for wildlife including SSS, grizzly bear, Canada lynx and wolverine.

   Comment Response: Thank you for your comment. Section 3.4.1 provides a description of the Affected Environment, i.e., existing condition, for Canada lynx and Critical habitat, grizzly bear and North American wolverine. Further information regarding the affected environment as it relates to other resources can be found throughout Chapter 3 and within the associated and incorporated by reference Biological Assessment and Biological Opinion Endangered Species Act Section 7(a)(2) consultation documents. For all other BLM SSS, The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

3. **Comment Summary:** The BLM should conduct surveys for wolverines, grizzly bears, bull trout, pine martins, northern goshawk and lynx. How often is the area surveyed? Add monarch butterflies, whitebark pine, and Canada lynx.

   Comment Response: Thank you for your comment. Inventory and monitoring of terrestrial and or aquatic wildlife species may be implemented, as needed, to determine occupancy and the need for design features. Sections 3.4 – 3.7 provides a description of the Affected Environment, i.e., existing condition, including the best available occurrence information for Canada lynx and Critical habitat, grizzly bear and North American wolverine, Bureau Sensitive species, and big game. Additionally, see Appendix F. Migratory Birds for project design feature specific to surveys for goshawk.

4. **Comment Summary:** The BLM should identify mitigation measures for MT SOC (birds, mammals and bats).

   Comment Response: Thank you for your comment. All species on the BLM SSS in MT are also MT SOC. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts. The BLM also updated Appendix F…

   Appendix F. to include the following: Where practical, restore or maintain special habitat components within roosting and foraging habitat, such as snags, tall brush and forested understories, open water sources along riparian corridors, or other features contributing to bat species productivity.

5. **Comment Summary:** The BLM should consider how road construction reduces wildlife

habitat.

Comment Response: Thank you for your comment. For the proposed action/Alternative 2, the impacts from proposed permanent and temporary roads have been described throughout the EA, starting in Chapter 1 through Chapter 3, environmental consequences. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

6. **Comment Summary:** The BLM should consider ways to reduce road densities through decommissioning and others post-project.

   Comment Response: Thank you for your comment. In response to public comments, the BLM crafted a sub-alternative B to explore treatments without the construction of temporary or permanent roads. For other existing roads, the BLM may conduct a compressive route analysis and travel management planning on this landscape, however this is outside the scope of this project.

7. **Comment Summary:** The BLM should consider how long-term benefits to wildlife can have short-term impacts. Flammulated owls benefit from forest treatments, specifically opening up stands.

   Comment Response: Thank you for your comment. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

Birds

8. **Comment Summary:** The BLM should describe existing conditions for black-backed woodpecker, golden eagle, Lewis's woodpecker, flammulated owl, great gray owl.

   The BLM should describe existing conditions (abundance and distribution) for MT SOC - pileated woodpecker, brown creeper, evening grosbeak, Cassin's finch, varied thrush, Clark's nutcracker, and Northern goshawk. Describe existing conditions (abundance and distribution) for MT SOC "at risk birds" - Williamson's sapsucker and olive-sided flycatcher, three hummingbird species (calliope, rufous, and broad-tailed hummingbirds).

   Comment Response: Thank you for your comment. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species including BLM sensitive species and migratory birds, and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

9. **Comment Summary:** The BLM should consider the (draft) design feature that would "discontinue and modify active eagle, goshawk, great gray owl, or flammulated owl nest" will halt until nesting season. The commenter is concerned that the individual(s) implementing the project would not be able to adequately identify these bird species and nests. The commenter suggests conducting raptor surveys prior to implementation of the

project as part of this design feature.

Comment Response: Thank you for your comment. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species including BLM sensitive species and migratory birds, and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

Also, the BLM modified Appendix F. Design Features for the Proposed Action, Section 11.0.15 Migratory Birds to include the following: Vegetation treatments would discontinue and potentially be modified in areas were an active eagle, goshawk, great gray owl, or flammulated owl nest is discovered and resume after the nesting season. Raptor surveys and identification would be done by or in consultation with the BLM biologist, biological technician or similarly qualified individuals.

10. **Comment Summary:** Design feature 11.0.15 Migratory Birds: Follows the RMP Appendix P DF-32. The BLM should Modify the design features for flammulated owl to include the other four MT SOC (northern goshawk, pileated woodpeckers, Clark's nutcrackers, Cassin's finches) and include surveys prior to implementations.

    Comment Response: Thank you for your comment. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species including BLM sensitive species and migratory birds, and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

11. **Comment Summary:** BLM should consider Migratory Bird Treaty Act (MBTA). Add mitigation measures for killing of nesting birds. Only allow logging in September and October.

    Comment Response: Thank you for your comment. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species including BLM sensitive species and migratory birds, and their habitats, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts.

12. **Comment Summary:** BLM should defer fragmentation of large intact habitats to maintain functional blocks of security habitat for SSS, SOC, and SPI. BLM should create seral habitats to create habitat conditions, including security for priority species.

    Comment Response: Thank you for your comment. Chapter 1, Purpose and Need, defines the need for the proposed action. In the long-term, as it relates Missoula RMP Wildlife Objective 2, but not limited to, the proposed action is expected to improve forest health conditions by promoting resiliency to wildfire, restore healthy ecological conditions, maintain, and enhance native and sensitive plant communities and increase resistance and resilience to forest insect and disease outbreaks. As described in the EA Section 3, this project, under both Alternative 2 and Alternative 2b, is expected to maintain and or improve security habitat for all species associated with these ecosystems.

13. **Comment Summary:** BLM should consider RMP conformance with wildlife.

14. **Comment Response:** Thank you for your comment. Section 1.3 Land Use Plan

Conformance has been updated to include the following wildlife goals, objectives, and management actions from the 2021 Missoula RMP:

WL-G-4. Manage long-term goals for NRV by providing diverse and well-distributed plant communities across the landscape by implementing principles of ecological forestry; while also ensuring there is habitat for native wildlife in sufficient quantity and quality to enhance biological diversity and conservation, and to sustain ecological, economic, and social values.

WL-G-5. Manage to provide diverse and well-distributed plant communities across the landscape. Implement sound ecological principles, focusing on ecological forestry, when designing vegetation treatments, to emulate natural disturbance and plant community development.

WL-OBJ-10. Retain dead and down woody material in amounts consistent with the NRV and habitat type groups, to the extent compatible with reforestation objectives, fire hazard reduction standards, and public health and safety.

WL-OBJ-13. Develop vegetation management projects in Canada lynx habitat within lynx analysis units, and lynx critical habitat, to enhance and create dense early stand initiation forage habitat and dense mature multistory foraging and denning habitat, in a mosaic pattern across the landscape over space and time.

WL-OBJ-16. Create a mosaic of early stand initiation and mature multistory habitat within each lynx analysis unit and lynx critical habitat. The BLM would consider thinning methods, within lynx habitat and lynx critical habitat, in early stand initiation structure if treatments would result in short-term effects with long-term benefits to snowshoe hare, red squirrel, and lynx.

WL-OBJ-17. Fuels treatment projects within the within the 1-mile wildland urban interface (WUI) buffer (approximately 7,648 acres) and Fire Management Zone I not meeting lynx conservation measures (due to protecting life, increasing the safety of firefighters, and protecting property, improvements, and infrastructure) may occur.

WL-MA-9. Create or maintain a mosaic of early, mid and late-succession forest conditions across the landscape consistent with natural disturbance regimes to create and maintain desired forest conditions for priority wildlife species.

Further, project design features intended to minimize and avoid impacts specified in the RMP have been incorporated into Appendix F: Design Features

15. **Comment Summary:** BLM should conduct an inventory of SOC (loggerhead shrike, brewer's sparrow, sage thrasher and golden eagle, ferruginous hawk, pinyon jay).

    Comment Response: Thank you for your comment. Inventory and monitoring of avian birds may be implemented, as needed, to determine occupancy and the need for project design features. See Appendix F: Design Features for the Proposed Action as well as Appendix I: Wildlife Issues Considered but Not Analyzed in Detail. Also, the project will follow the Missoula RMP (USDI-BLM 2021), Appendix P.

16. **Comment Summary:** Science recommends at least 20% - 25% old growth for forest bird species. BLM should set aside 20% for conservation. Leave undisturbed older blocks of mature forests.

    Comment Response: Thank you for your comment. Section 2.2 states: Approximately 4,519 acres (19.1%) of BLM managed land within the planning area were considered for treatment but deferred due to concerns over road building on excessively steep slopes, road building within Riparian Habitat Conservation Areas (RHCA) in Bull Trout Critical Habitat, access across USFS and private lands, or to maintain un-roaded, secure habitat characteristics. Therefore 19% has been effectively "set aside".

    Section 2.1 of the EA states that: "Natural range of variability (NRV) is a spectrum of ecological vegetative states, and the spatial and temporal variation in these states. Modeling was used to develop a quantified estimate of the NRV for the planning area and knowledge of historical conditions helped corroborate the model results. Historical conditions were established based on the "Historical Vegetation of Montana" (Losensky 1997). Current conditions were determined by using data collected within the planning area by BLM personnel conducting forest inventory plots as well as photo interpretation.

    Managing forest ecosystems within their NRV will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994)." This is consistent with the Missoula Field Office 2021 RMP (USDI-BLM 2021) Forest Vegetation Goal 2 which states: "Restore or maintain forests within the natural range of variability (NRV) for each habitat type group in terms of species composition, structure, density, and disturbance patterns. Emulate disturbance patterns in terms of intensity, frequency, and scale."

    Current conditions versus desired conditions for each Habitat Type Group (HTG) are displayed on Section 3.2.3 of the EA. Appendix G provides the current condition, NRV and Desired Condition for all HTGs, as described by Primary Structural Component in percent of area for both BLM lands and all ownerships. Primary Structural Component is comprised of stem size class and canopy story development.

17. **Comment Summary:** BLM should Include snag management. Disclose snag densities in the project area.

    Comment Response: Thank you for your comment. As described in the EA, treatments would follow guidelines provided in the Northern Region Snag Management Protocol (USDA-FS. 2000) and Trees and Logs Important to Wildlife in the Interior Columbia River Basin (Bull et al. 1997) to maintain and/or improve snag or large woody debris habitat. Appendix. F states: Generally, dead trees greater than 24 inches DBH would not be permitted to be cut unless they are within two tree lengths of an open road. An exception to this is if there is a high density of dead trees creating a public safety hazard and the needs for snag dependent wildlife habitat have been met, USDI-BLM 2021) (see Appendix F). Due to recent and continuing insect caused tree mortality, current snag density across the planning area is unavailable but would be evaluated at the site-specific level during implementation to ensure the densities described in Northern Region Snag Management Protocol (USDA-FS. 2000) are met or increased if deficient.

Big Game, Elk, and Moose.

1. **Comment Summary:** BLM should provide information on elk summer and fall habitat. BLM should provide hiding and thermal cover habitat components near quality elk summer and fall habitat. Consider hiding cover provisions in Missoula RMP. Disclose impacts on big game winter range, disturbance/displacement, and forage availability. Provide big game security habitat near harvest units, parks, meadows. Identify big game security habitat for elk. Consider "elk security areas" of 250 acre blocks of forested habitat 0.5 miles or more from open roads, with the blocks encompassing 30% or more of the area. Use Christensen et al (1993) recommendation of elk habitat effectiveness of 70% in summer range and 50% in other areas where elk are one of the primary resource considerations. Consider canopy cover per use of actual elk during hunting season. Consider road density limitations for elk suggested: 0.7 mile/sq mile in summer range and 1.7 mi/sq mile in other areas. Measure habitat effectiveness for elk. Consider logging equipment displacement of elk and impacts on hunting opportunities. Disclose hiding cover, winter range, and security - moose and elk. Disclose existing conditions and impacts.

   Comment Response: Thank you for your comment. Big game are considered a priority species for habitat management and are considered in the EA. The BLM updated the EA (sections 1.4, and sections 3.5-3.6) to include in detail analysis on how the alternatives would potentially affect terrestrial wildlife species and their habitats, including big game, and how the project design features listed in Appendix F, BLM Special Status terrestrial wildlife species would minimize and avoid impacts. see Appendix F: Design Features for the Proposed Action. Also, Chapter 1, Purpose and Need, page 2, defines the need for the proposed action. In the long-term, the proposed action is expected to improve forest health conditions by promoting resiliency to wildfire, restore healthy ecological conditions, maintain and enhance native and sensitive plant communities and increase resistance and resilience to forest insect and disease outbreaks. Both in Alternative 2 (proposed action) and Alternative 2b (sub-alternative), the project is expected to maintain and or improve big game thermal and hiding/security cover, forage availability and seasonal habitats associated with the project area.

Canada Lynx

1. **Comment Summary:** BLM should consider the 2013 LCAS is not the best science for lynx management. The lynx habitat definitions are incorrect. Consider Kosternman et al (2018) Holbrook et al (2017b). Suggests a different lynx habitat impact analysis and finding in the project area if the BLM used updated science.

   Comment Response: Thank you for your comment. The LCAS was fully revised more recently (Interagency Lynx Biology Team 2013) and continues to be the primary guidance for land management agencies in other regions across the range of the Canada lynx in the U.S (Interagency Western Lynx Biology Team 2022). The BLM Montana uses the LCAS 2013 as their best available science, in consultation with the USFWS. The USFWS reviewed the biological assessment and supplemental information for the CFF project, and the 2020 biological opinion and incidental take statement for the revised Missoula RMP. The USFWS concluded the "project complies with the LCAS guidelines to leave substantial areas of lynx habitat untreated; retain patches of dense horizontal cover; and that not more than 15% of lynx habitat on federal lands within the LAU be

changed to an early stand initiation structure within a 10-year period." The also USFWS determined the CFF project is not likely to jeopardize the continued existence of lynx. If new information, reveals the effects of the action may affect Canada lynx and or Canada lynx critical habitat, in a manner or extent not previously considered, the BLM will reinitiate consultation per 50 CFR 402.16 Reinitiation of Consultation. Consider lynx linkage habitat per the USFS Northern Rockies Lynx Planning Area. For sub-alternative …

2. **Comment Summary:** BLM should conduct on-site surveys for snowshoe hares.

   Comment Response: Thank you for your comment. The Missoula Field Office did not conduct snowshoe hare surveys and relied on the best available science for the analysis of effects to Canada lynx and associated resources such as snowshoe hare. If new information, reveals the effects of the action may affect Canada lynx and or Canada lynx critical habitat, in a manner or extent not previously considered, the BLM will reinitiate consultation per 50 CFR 402.16 Reinitiation of Consultation.

3. **Comment Summary:** Allowance of treatments of 5,897 acres within the WUI and FMZ 1 is arbitrary.

   Comment Response: Thank you for your comment. See the Missoula Field Office RMP (USDI-BLM 2021) as well as the USFWS consultation for the RMP (2020, BO). The decision regarding allowing treatments within WUI and FMZ 1 was issued prior to initiation of this project thus is outside the scope of this analysis and decision. Despite that, this project does not come close to exceeding that number. Per the Biological Opinion for the Clark Fork Face dated 11-9-22, *The proposed action* (Alternative 2) *will treat approximately 243 acres of snowshoe hare habitat within FMZ 1 and 1-mile buffer of areas functioning as WUI. To date, no projects have previously tiered to the 2020 programmatic biological opinion and incidental take statement. Thus, the total acreage of snowshoe hare habitat treated or proposed to be treated (have gone through consultation with the Service) in FMZ 1 and the WUI 1-mile buffer, including the Clark Fork Face Project, is 243 acres. This total amount is well within the amount (5,897 acres) anticipated for the MiFO in the 2020 incidental take statement. The acres of snowshoe hare habitat treated are distributed throughout the action area and are not excessively concentrated within any one LAU. Thus, the proposed action is consistent with the assumptions made in the 2020 programmatic biological opinion.*

   Lynx habitat within the sub-alternative action 2b in PCE 1a is approximately 221 acres within FMZ 1 and 1-mile buffer of areas functioning as WUI (see section 3.4.1).

4. **Comment Summary:** The EA says lynx habitat will be improved over time but lacks references to demonstrate how this will be accomplished.

   Comment Response: Thank you for your comment. Under both alternatives, proposed treatments are expected to improve the Canada lynx habitat by creating openings in the canopy that will stimulating the regeneration of dense horizontal cover used by snowshoe hares. In the long-term, the proposed action is expected to improve forest health conditions by promoting resiliency to wildfire, restore healthy ecological conditions, maintain, and enhance native and sensitive plant communities and increase resistance and resilience to forest insect and disease outbreaks. All of which are beneficial to Canada lynx and snowshoe hares.

5. **Comment Summary:** In the Missoula RMP Treatments are not allowed in FMZ 2 in lynx habitat.

   Comment Response: Thank you for your comment.

   The Missoula RMP (USDI-BLM 2021) does not preclude treatments within FMZ 2 in lynx habitat. It states in FMZ 2 "The full range of fuels treatments including mechanical and prescribed fire on lands in this category will be important to the success of wildland fire management." Regarding Canada lynx, Wildlife Objective 13 of the RMP (USDI-BLM 2021) states: "Develop vegetation management projects in Canada lynx habitat within lynx analysis units and lynx critical habitat to enhance and create dense early stand initiation forage habitat and dense mature multistory foraging and denning habitat, in mosaic pattern across the landscape over space and time." This is what we have proposed in Section 2.1 of the EA and these proposed treatments are in alignment with the LCAS conservation measures for vegetation management. For example, the LCAS Conservation Measures state "Use fire and mechanical vegetation treatments as tools to maintain a mosaic of lynx habitat, in varying successional stages, distributed across the LAU in a landscape pattern that is consistent with historical disturbance processes."

   Table 10 in Section 2.1 of the EA indicates 876 acres of treatment are proposed in FMZ 2 with Alternative 2 (776 acres with the Sub Alternative 2b). Of those, 104 acres with the Alternative 2 and 99 acres with the Sub Alternative are considered current lynx habitat as defined by the Biological Assessment for this project (Habitat Type Groups (HTG) 4, 5, or 6 and cover type that include subalpine fir or Engelmann spruce). Despite being within FMZ 2, these 104 or 99 acres are intermixed with and adjacent to private land (see Appendix D. Proposed Action Map and Fire Management Zone Map) and present the same risks to life, property and firefighter safety as forested stands in FMZ 1. In conversation with the USFWS Consultation Biologist (on 10/13/2022) when presented with the treatments' proximity to private land, and associated risks to life, property and firefighter safety, she agreed that these acres should be considered WUI.

6. **Comment Summary:** The EA states that prescribed burning won't occur in lynx habitat, but page 19 suggests it would be allowed.

   Comment Response: Thank you for your comment. The BLM updated the EA Section 2.1 to make clear that prescribed burning will not occur in lynx habitat.

7. **Comment Summary:** Levels of take are misrepresented.

   Comment Response: Thank you for your comment. Refer to USFWS Biological Opinion page 3: "*We find that the adverse effects were adequately analyzed in the 2020 programmatic biological opinion and that the project conforms to the 2020 incidental take statement. Our finding is based on: (1) the proposed site-specific project falls within the scope of the 2020 programmatic biological opinion; (2) the effects of the proposed action conducted within FMZ 1 and the WUI 1-mile buffer that result in snowshoe hare habitat degradation are consistent with those anticipated and analyzed in the 2020 programmatic biological opinion; and (3) the amount of incidental take anticipated in the 2020 incidental take statement would not be exceeded. Therefore, the proposed action is consistent with the 2020 programmatic biological opinion and incidental take statement.*"

8. **Comment Summary:** The BLM should disclose reporting requirements to the USFWS.

Commentor requests the report.

Comment Response: Thank you for your comment. Annual reporting requirements are described in the Terms and Conditions of the Biological Opinion for this project, which is available the project record.

9. **Comment Summary:** The EA states that thinning treatments designed specifically to benefit snowshoe hare/lynx habitat "where appropriate" in lynx critical habitat, but provides no data on where that would occur.

   Comment Response: Thank you for your comment. Current lynx habitat for the purposes of analysis and consultation for this project included those stands within a Lynx Analysis Unit (LAU) in HTG 4 - 6, with cover types that contain Engelmann Spruce and/or Subalpine fir. During implementation treatments in these stands would be modified as described to minimize effects to lynx (no prescribed burning and retention of understory vegetation). Current cover type by HTG is provided in Chapter 1 of the EA.

Wolverine

1. **Comment Summary:** The BLM has failed to analyze impacts wolverine. Lack criteria for measuring habitat quality for this proposed species.

   Comment Response: Thank you for your comment. The analysis for wolverine relied upon Inman et. al 2013, "Developing priorities for metapopulation conservation at the landscape scale: Wolverines in the western United States" to identify habitat within the CFF project area and proposed treatment areas. The model identified 48 acres of primary wolverine habitat in the Project Area (0.02% of the Project Area) but none within the proposed treatments. The entire Project Area and all proposed treatments constituted male wolverine dispersal habitat. Female wolverine dispersal habitat was identified in 64,183 Project Area acres (26.0% of Project Area), and 10,508 acres (54.9%) of the proposed treatment area.

2. **Comment Summary:** The BLM should consider impacts to wolverines from roads.

   Comment Response: Thank you for your comment. Section 2.2 describes the Alternatives Considered but Not Analyzed in Detail. An alternative was considered that included no new temporary or permanent road construction. This Alternative was determined to not meet the Purpose and Need for the project. The 2018 Species Status Assessment for Wolverine, the USFWS noted: “demographic risks to the species from either known or most likely potential stressors (i.e., effects from roads, disturbance due to winter recreational activities, effects of wildland fire, and overutilization) are low based on our evaluation of the best available information as it applies to current and potential future conditions for the wolverine and in the context of the attributes that affect its viability” (USDI Fish and Wildlife Service 2018).

3. **Comment Summary:** Project will impact wolverine habitat, dispersal, forage, and connectivity such that it will jeopardize the continued existence of wolverine. Project would impact development of horizontal cover and remove coarse woody debris, thus degrading dispersal habitat and forage for wolverine.

   Comment Response: Thank you for your comment. The BA for the project analyzed the

potential effects to wolverine dispersal and concluded: "Disturbance to male and female wolverine dispersal habitat would be temporary and occur at a scale much smaller than a wolverine home range or dispersal movement. While dispersal activities could be affected to some degree, these habitats are not suitable for the establishment of home ranges and reproduction. Wolverine do not generally use dispersal habitats for foraging (USDI Fish and Wildlife Service 2013)." The BA also determined the proposed action is not likely to jeopardize the continued existence of the North American wolverine DPS. USFWS concurred with this determination on November 8, 2022. The sub alternative 2b includes the same suite of vegetation treatments as the proposed action alternative 2 but a reduction in treatment acres and no proposed new roads. As the affected area remains the same but the impacts are reduced, the original consultation and subsequent biological opinion remain appropriate for both the proposed action and the sub alternative.

4. **Comment Summary:** Activity on adjacent land ownerships would cause impacts to dispersal, primary and denning habitat for wolverines.

   Comment Response: Thank you for your comment. The BLM Missoula Field Office does not manage or have jurisdictional authority on the adjacent ownerships. This is not within the scope of this project and will not be considered further.

5. **Comment Summary:** Current **s**nowmobiles use is limited to existing roads and trails. How would roads and temp roads cause an increase in snowmobile activity? Snowmobile technology can access higher elevations, thus impacting wolverines.

   Comment Response: Thank you for your comment. No change in snowmobile use is anticipated. Per current management direction, snowmobiles are already allowed to use much of the project area on or off roads. In Area Designation 4, snowmobiles are not allowed at all. Under Alternative 2, the proposed new road segments in Area Designation 4 (See the Missoula Field Office 2020 Travel Map) will remain closed to snowmobiles. The proposed action is not expected to increase levels of recreational use, subsequently, increased effects to wildlife including wolverine are not anticipated (See biological opinion for the Clark Fork Face dated 11-9-22). Under Alternative 2b (sub-alternative) no new road segments would be constructed.

6. **Comment Summary:** For wolverine, the BLM should consider an alternative that has "no roads" as an alternative considered in detail.

   Comment Response: Thank you for your comment. Section 2.2 describes the Alternatives Considered but Not Analyzed in Detail. An alternative was considered that included no new temporary or permanent road construction. This Alternative was determined to not meet the Purpose and Need for the project. The 2018 Species Status Assessment for Wolverine, the USFWS noted: “demographic risks to the species from either known or most likely potential stressors (i.e., effects from roads, disturbance due to winter recreational activities, effects of wildland fire, and overutilization) are low based on our evaluation of the best available information as it applies to current and potential future conditions for the wolverine and in the context of the attributes that affect its viability” (USDI Fish and Wildlife Service 2018).

7. **Comment Summary:** BLM should consider recreation impacts to wolverine. Snowshoers, backcountry skiers would have access to the new road miles, thus higher elevations, and more wolverine habitat. EA should analyze the effects of widely spaced trees and closed roads to both non-motorized and motorized recreational use.

Comment Response: Thank you for your comment. Recreational impacts to wolverine were considered. The BA for the project concluded: "The proposed action is not expected to change levels of recreational use or create further barriers to dispersal. Wolverine foraging and denning would not likely be impacted." Further, the summary of the five-factor analysis for North American wolverine (USDI Fish and Wildlife Service 2013), concluded, dispersed Recreation (e.g., snowmobiling and heli-skiing) were not identified as a threat to the continuous wolverine Distinct Population Segment (DPS).

8. **Comment Summary:** BLM should Consider impacts of climate change on wolverine habitat, reliance on old growth. Use CEQ guidance.

   Comment Response: Thank you for your comment. The BLM recognizes climate change and the lack of regulatory mechanisms to fight climate change are a primary threat to the continuous wolverine DPS. However, as stated in section 1.1 of the EA, the Purpose and Need of this project includes the need to promote resilience to wildfire by reducing forest fuel loading and breaking up homogeneous stand conditions, and to restore healthy ecological conditions by increasing the acreage of forest communities that are moving towards the midpoint of NRV. Through implementation of the vegetative treatments described in the section 2 proposed action, the project is designed to improve forest health and resiliency at a landscape scale. These improvements to forest health and resilience through promotion of stand diversity and individual tree vigor, as well as site specific reforestation as described in the EA, will produce forests which are best suited to survive the anticipated changes in climate. As stated in Adapting Forests to Climate Change (UC-ANR Publication 8574, 2017,) "To help your mixed-conifer forest adapt to climate change, consider ways to encourage resilience to drought, fire, and insect attacks. Strategies include thinning to reduce competition, managing for species diversity, and selecting seedlings that are likely to survive a warmer, drier climate."

9. **Comment Summary:** For wolverine, the BLM should consider an alternative that does not cut mature or old growth forests.

   Comment Response: Thank you for your comment. Section 2 of this EA include alternatives considered but not analyzed in detail including an alternative that does not cut mature or old growth forests. Further, the use of NRV is described in Section 3.1 of the EA: "NRV was developed by using “Historical Vegetation of Montana” (Losensky 1997) as a basis for understanding ecologically sustainable conditions. Managing forest ecosystems within their natural range of variability (NRV) will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). Current conditions were determined by using data collected within the planning area (BLM forest inventory 2014 – 2015 as well as subsequent field visits). The concept of managing forests to move towards or remain within their NRV was utilized to create desired conditions for the Clark Fork Face planning area. Section 3.2.3 Environmental Effects - Alternative 2 describes in detail how the proposed treatments would improve forest health and resilience, reduce fire severity and shift the stands towards the midpoint of NRV. Habitat Type Groups with complete breakdown of Habitat Type Codes, NRV Current Condition and Desired Condition are listed in Appendix G of the Document.

1. **Comment Summary:** The project must include analysis of road density and secure habitat.

   Comment Response: Thank you for your comment. Please see the CFF Biological Assessment, Biological Opinion for the Missoula Field Office revised RMP and second tier consultation for the CFF proposed action.

2. **Comment Summary:** The BLM should define secure habitat for the area. Define secure core for the area. Disclose impacts to secure habitat and secure core.

   Comment Response: Thank you for your comment. In Section 3.4, the project analysis defined areas providing security habitat to be greater than 500 meters from a motorized route. Secure core is an area of the NCDE primary conservation area more than 0.31 miles (500 meters) from a route open to wheeled motorized use during the grizzly bear non-denning season, or a gated route, and that is greater than or equal to 2,500 acres (3.91 mi2 (10.12 km2) in size. CFF project analysis did not find any habitat that met the definition of secure core. The November 8, 2022 BO concluded, "In sum, due to all of these factors (no effects to secure habitat, the short-term nature of the temporary roads (maximum of three years from construction), the fact that not all temporary roads will be constructed and used at the same time, and no change in open linear road density) would occur, impacts related to the construction and use of the 5.91 miles of temporary road that do not affect secure habitat would be insignificant to grizzly bears."

3. **Comment Summary:** Considers project an "illegal taking" under the ESA.

   Comment Response: Thank you for your comment. Please refer to USFWS Biological Opinion page 3: "*We find that the adverse effects were adequately analyzed in the 2020 programmatic biological opinion and that the project conforms to the 2020 incidental take statement. Our finding is based on: (1) the proposed site-specific project falls within the scope of the 2020 programmatic biological opinion; (2) the effects of the proposed action conducted within FMZ 1 and the WUI 1-mile buffer that result in snowshoe hare habitat degradation are consistent with those anticipated and analyzed in the 2020 programmatic biological opinion; and (3) the amount of incidental take anticipated in the 2020 incidental take statement would not be exceeded. Therefore, the proposed action is consistent with the 2020 programmatic biological opinion and incidental take statement.*"

4. **Comment Summary:** Commentor disagrees with the analysis of 16 miles of permanent roads and 6 miles of temp roads and determination of no adverse impacts to bear. Contends the project would be in "violation" of the Missoula RMP (2021) Biological Opinion for grizzly bears, based on the 19 miles of road added to the system. BLM should use the "moving window approach" for road density calculations with grizzly bear.

   Comment Response: Thank you for your comment. Please refer to the CFF Biological Assessment, Biological Opinion for the Missoula Field Office revised RMP and the second tier consultation for the CFF proposed action. In the Biological Opinion, dated November 8, 2022, the USFWS noted: "*Other than the effects associated with the existing motorized access conditions, the temporary roads constructed and used that affect secure habitat, and the permanent road construction, no other effects are likely to adversely affect grizzly bears."* The USFWS also concluded: *"we find that the adverse*

effects related to the existing motorized access conditions and temporary road construction and use were adequately analyzed in the 2020 programmatic biological opinion and incidental take statement associated with that opinion and the effects analysis for these specific activities conducted under the Clark Fork Face Project is tiered to that programmatic biological opinion and incidental take statement." The BLM included a sub-alternative, Alternative 2b, that would not include construction of permanent or temporary roads.

5. **Comment Summary:** Commentor expressed concern about "grizzly bear corridors." States the area is a crucial habitat linkage between NCDE and greater Bitterroot ecosystem. BLM should consider impacts to the area to function as a demographic connectivity area.

   Comment Response: Thank you for your comment. In the November 8, 2022 BO, the USFWS concluded: "we do not expect the Clark Fork Face Project to negatively affect grizzly bears within or connectivity with the surrounding grizzly bear ecosystems (GYE, CYE) nor the ecosystems further away (NCE, SE, BE)."

6. **Comment Summary:** Referring to the Existing Degraded Baseline (per ESA), the commenter questions the description of the existing degraded baseline.

   Comment Response: Thank you for your comment. For a complete description of the existing baseline, refer to the EAs Summary of the Proposed Project, pg. 1-2, Purpose and Need pg. 2-8 for a description of current conditions and the affected environments of resource areas discussed in chapter 3. Also refer to the CFF Biological Assessment, Biological Opinion for the Missoula Field Office revised RMP and the second-tier consultation for the CFF proposed action. These documents also describe the existing conditions as it relates to grizzly bear.

7. **Comment Summary:** The BLM must analyze the effectives of barriers and gates on the roads that are closed to motorized use by the public. Consider illegal access impacts (Wild Rockies v. Probert) CV 18-67-M-DVM).

   Comment Response: Thank you for your comment. Based on public input, the following design features have been added to Section 11.0.17 of Appendix F.
   - Temporary spur roads would be utilized for a specific treatment and would remain in place for no longer than 3 years from time of construction. Following use and at the conclusion of the treatment, all temporary roads would be obliterated or made impassable, and have drainage features and native seed applied.
   - All proposed new permanent spur roads would be physically closed to public motorized use immediately upon construction. Physical closures include but are not limited to gates, boulders / riprap, Kelly-humps / tank-traps, or obliteration of a segment of road at it's origin.
   - Closures would be monitored via contractors, BLM employees and volunteer public who would be directed to immediately document and report any breach observed to the BLM. Upon notification of a failed closure, the BLM would take action to repair, replace or improve the closure within 30 days or as soon as conditions allow (periods of deep snow or saturated roads may delay closure repair or replacement depending on the season of discovery).

8. **Comment Summary:** The BLM should consider displacement associated with

administrative use. There is no analysis of traffic levels on the roads (including administrative use for logging). Define impacts from intermittent heavy traffic.

Comment Response: Thank you for your comment. Please refer to the CFF Biological Assessment, Biological Opinion for the Missoula Field Office revised RMP and the second-tier consultation for the CFF proposed action. In the Biological Opinion, dated November 8, 2022, the USFWS concluded: "*we find that the adverse effects related to the existing motorized access conditions and temporary road construction and use were adequately analyzed in the 2020 programmatic biological opinion and incidental take statement associated with that opinion and the effects analysis for these specific activities conducted under the Clark Fork Face Project is tiered to that programmatic biological opinion and incidental take statement.*" Further, the BLM intends to conduct a comprehensive route analysis and travel management planning on this landscape, however this is outside the scope of the CFF project.

9. **Comment Summary:** The BLM should disclose the period when project activities occur in the analysis for understanding impacts to grizzly bear.

   Comment Response: Thank you for your comment. Section 3.4.2 of the EA states: Project implementation would occur within limited treatment blocks over a 5-15 year period. The proposed treatment area comprises 7.7% percent (19,147 acres) of the overall 247,191-acre planning area. Treatments would take place within only a portion of that area in any one season. If like-sized areas were treated each season for 10 years, 1915 acres would be treated each year (less than 1% of the planning area). Some areas would be visited in a subsequent season for prescribed burning or tree planting causing the project to cover a maximum of 15 years, while the proposed vegetation treatments would likely be completed within a shorter 5 – 10-year timeframe. Temporary roads shall be on the landscape no longer than 3 years from the time of road construction.

10. **Comment Summary:** The BLM should consider impacts to grizzly bear security and hiding cover.

    Comment Response: Thank you for your comment. In the November 8, 2022 BO, the USFWS concluded: "Cover would be affected in the short-term but in the longer term of 2 to 30 years the impacts of the proposed treatments would be largely beneficial for grizzly bears."

11. **Comment Summary**: The BLM should disclose impacts to denning habitat.

    Comment Response: Thank you for your comment. Effects to denning habitat were analyzed in the 2nd Supplement to the Biological Assessment dated 9/29/22 which is available in the project record.

12. **Comment Summary**: The EA does not take a hard look at cumulative effects to grizzly bear.

    Comment Response: Thank you for your comment. For a more comprehensive analysis of cumulative effects, refer to the CFF biological assessment available in the Project Record.

13. **Comment Summary**: BLM should disclose the field surveys for T&E, sensitive and rare plants in the units.

Comment Response: Thank you for your comment. Ongoing T&E monitoring is disclosed in the project BA and BO. Planned inventory and monitoring for SS Plants is described in Section 11.0.6 of the EA, Project Design Features for the Proposed Action. Impact Analysis Worksheets for all resources are available in the project file.

14. **Comment Summary:** Requests formal consultation with USFWS.

    Comment Response: Thank you for your comment. Formal consultation with the USFWS for this project was initiated on 4/28/22. The Biological Opinion was finalized on 11/8/22. See also the Missoula Field Office RMP EIS (USDI-BLM 2021) as well as the USFWS consultation for the RMP (USDI-FWS 2020).

15. **Comment Summary**: BLM should disclose the BA.

    Comment Response: Thank you for your comment. The Biological Assessment plus Supplements and Biological Opinion are available in the Project Record.

16. **Comment Summary**: BLM should disclose biological evaluation for sensitive and management indicator species.

    Comment Response: Thank you for your comment. The BLM does not use management indicator species.

17. **Comment Summary**: Is the 22 miles of new road construction a violation of the RMP BO?

    Comment Response: Thank you for your comment. Refer to the CFF Biological Assessment, Biological Opinion for the Missoula Field Office revised RMP and the second tier consultation for the CFF proposed action. In the Biological Opinion, dated November 8, 2022, the USFWS concluded: "we find that the adverse effects related to the existing motorized access conditions and temporary road construction and use were adequately analyzed in the 2020 programmatic biological opinion and incidental take statement associated with that opinion and the effects analysis for these specific activities conducted under the Clark Fork Face Project is tiered to that programmatic biological opinion and incidental take statement."

18. **Comment Summary**: Mountain bikes would be able to utilize the new roads. Would this include ebikes? Disclose the impacts to grizzly bear-human encounters based on increased mountain bike use this in the area.

    Comment Response: Thank you for your comment. Ebikes are not currently allowed on roads that are closed to motorized use and no increase in motorized use is proposed. See Section 1.5 Issues Identified but Eliminated from Further Analysis for a discussion of mechanized use associated with the proposed roads. Proposed road new segments range from .07 to 1.32 and average .5 miles. These new road spurs are not expected to increase mountain bike use in the area as there are better mountain biking experiences nearby (Blue Mountain, Pattee Canyon and the Rattle Snake Recreation areas in Missoula, and Copper City near Three Forks, Montana). The Biological Assessment and Biological Opinion issued by the USFWS on 11/8/22 analyze impacts associated with mountain biking.

19. **Comment Summary**: Snowmobiles are currently allowed in the project area. Snowmobiles would be allowed to use the 19 miles of permanent roads, which would likely increase risk of disturbance to denning grizzly bears including possible den abandonment and the threat of lethal avalanches.

    Comment Response: Thank you for your comment. No change in snowmobile access is anticipated. Per current management direction, snowmobiles are already allowed to use much of the project area on or off roads. In Area Designation 4, snowmobiles are not allowed at all. Under Alternative 2, the proposed new road segments in Area Designation 4 (See the Missoula Field Office 2020 Travel Map) will remain closed to snowmobiles. The proposed action is not expected to increase levels of recreational use, subsequently, increased effects to grizzly bears are not expected. Under Alternative 2b, no new road segments would be constructed.

Bull Trout

1. **Comment Summary**: Does this project have impacts to bull trout?

   Comment Response: Thank you for your comment. Internal scoping determined there would be "no effect" to bull trout or bull trout designated critical habitat. Issue development resulted in impacts to fisheries, including bull trout, were not an issue to be analyzed in detail. With respect to bull trout and bull trout dch, project activities are at such a distant proximity and are buffered and minimized through BMPs and conservation measures, as to elicit a non-measureable effect (sediment abundance and water temperature being the key potential impacts). The Impact Analysis Worksheet is available in the project record.

2. **Comment Summary**: Commentor disagrees with the "no impact" determination on bull trout based on fish occupancy map. It appears that project is occurring near/in bull trout habitat.

   Comment Response: Thank you for your comment. As stated in Section 1.3 of the EA, the proposed action complies with bull trout and habitat management policy found in the 2021 Missoula FO RMP. The RMP guidance is based on compliance with the 2015 Recovery Plan for the Conterminous United State Population of Bull Trout and key support documents Conservation Strategy for Bull Trout on USFS lands in Western Montana (2013) and the Updated Interior Columbia Basin Strategy (2014). The Missoula Field Office determined bull trout (threatened) and bull trout designated critical habitat would not be affected due to factors associated with design features (Appendix F) and conservation measures incorporated into the proposed action; as well as the distant proximity and local topography of vegetation treatments and haul routes (Appendix D map 9.1) to occupied bull trout habitat and bull trout designated critical habitat.

   Affects to bull trout are discussed in the Section 1.0 Issues Identified but Eliminated from Detailed Analysis under the heading:

   - *How would proposed treatments affect fisheries habitat within the planning area (including SSS species and designated critical habitat)?*

   As stated in that section, when treatments are designed to comply with the Aquatic and Riparian Habitat Conservation Strategy, adverse impacts to aquatic habitats will be negligible.

The Missoula RMP (USDI-BLM 2021), Appendix B discusses the effectiveness of managing for Riparian Conservation Areas (RCAs) through adaptive management techniques that improve or maintain aquatic habitat at the site-specific level. For the Clark Fork Face project, RCAs for all lotic and lentic features were evaluated to determine appropriate Riparian Management Objectives (RMOs) and assess RCA widths; these site-specific RCAs and RMOs are listed in Table 4 of Section 1.5 and vary from 50' to 300'.

The not all fish-bearing streams indicated on the referenced map are bull trout habitat. One treatment unit is in close proximity to the Clark Fork River, however topographic features eliminate potential for effects to bull trout/bull trout designated critical habitat.

3. **Comment Summary**: BLM should provide the RCA and RMP determinations for the public.

   Comment Response: Thank you for your comment. Please see section 1.5 of the EA: Issues Identified but Eliminated from Further Analysis, for a discussion of RCAs in the planning area under the heading:

   - *How will mechanical harvest operations impact lotic and lentic riparian features properly functioning condition (PFC) status?*

   Appendix F. Project Design Features for the Proposed Actions, Sections 11.0.2 and 11.0.3 included the full list of Riparian and Water Quality design features.

4. **Comment Summary**: BLM should disclose effects to aquatic systems from recent fires (map of large fires and fire starts on map 12).

   Comment Response: Thank you for your comment. Fire impacts to aquatic habitat and riparian systems were considered as a component of the planning area environment, in the Section 3.2.1: Resource Issue 1 Effected Environment. Naturally occurring wildfires have been a part of the natural range of variability throughout the Clark Fork Face landscape since pre-western civilization; generally the impacts of fire create basin-wide moderation of hydrologic conditions and are considered a normal ecological process. Although the fire season of 2017 was very active and several large fires burned in western Montana, no large fires burned in the planning area that summer (See large fire and fire start map 9.12).

5. **Comment Summary**: BLM should analyze how climate change impact bull trout and aquatic systems.

   Comment Response: Thank you for your comment. Climate change has the potential to increase water temperatures and reduce stream discharge. This has been identified as having adverse impacts to bull trout and mountainous aquatic systems/fish assemblages. Efforts to restore forest health/move toward NRV has the potential to mediate these effects by promoting healthy forest conditions similar to historic conditions these aquatic ecosystems evolved with.

Westslope Cutthroat Trout

1. **Comment Summary**: BLM should describe impacts on westslope cutthroat trout species or other sensitive species.

   Comment Response: Thank you for your comment. Please see section 1.5 of the EA: Issues Identified but Eliminated from Further Analysis, for a discussion of potential impacts to fisheries in the planning area under thes headings:

   - *How would proposed treatments in each alternative affect fisheries habitat within the planning area (including SSS species and designated critical habitat)?*

   - *How will new road construction affect fisheries habitat within the planning area (including Special Status Species and designated critical habitat)?*

   Through implementation of Project Design Features (see Sections 11.0.3, 11.0.4 and 11.0.12 of Appendix F), Best Management Practices, and applicable laws and regulations the issue was eliminated from further analysis. Long standing conservation measures developed to protect cutthroat and other fish habitat, through BMPs, SMZs and managing for riparian habitat objectives as identified in the RMP and the EA eliminate or minimize adverse impacts to this resource. Impacts considered focus on sedimentation and water temperature; the conservation measures, particularly 150' or 300' RCA buffers on occupied habitats, are effective in minimizing sedimentation and retaining streamside shade and microclimate conditions to reduce effects to water temperature. Importantly, these measures were developed primarily in response to historic logging impacts that were identified as having adverse impacts to water quality and fisheries habitat.

Vegetation

1. **Comment Summary**: BLM should describe old growth existing conditions. Disclose old growth and mature - historic levels, viable populations of dependent wildlife; etc. Disclose method used to model old growth.

   Comment Response: Thank you for your comment. Current conditions versus desired conditions for each Habitat Type Group (HTG) are displayed in section 3.2.3 of the EA. Additionally, appendix G provides the current condition, NRV and Desired Condition for all HTGs, as described by Primary Structural Component in percent of area for both BLM lands and all ownerships. Primary Structural Component is comprised of stem size class and canopy story development.

   The direction as established by the 2021 Missoula FO RMP (DOI-BLM 2021) is to describe the forest in terms of Habitat Type Group and to manage towards midpoint of NRV. The 2021 Missoula FO RMP (DOI-BLM 2021) does not use the term Old Growth but does establish management direction for mature forests. Please see Section 2.3.3 for a discussion of an Alternative that was considered to exclude old growth from management.

2. **Comment Summary**: BLM should disclose old growth forest in each third order drainage. Provide old growth surveys according to Green et al. 1992.

   Comment Response: Thank you for your comment. The CFF Planning Area is one of several geographic areas delineated by the Missoula Field Office, based loosely on

watershed boundaries, as a way of describing and organizing the area within the Field Office administrative boundaries (excerpt from the BA submitted to USFWS 4-28-2022).

Current conditions versus desired conditions for each Habitat Type Group (HTG) are displayed in section 3.2.3 of the EA. Additionally, appendix G provides the current condition, NRV and Desired Condition for all HTGs, as described by Primary Structural Component in percent of area for both BLM lands and all ownerships. Primary Structural Component is comprised of stem size class and canopy story development.

The direction as established by the 2021 Missoula FO RMP (DOI-BLM 2021) is to describe the forest in terms of Habitat Type Group and to manage towards midpoint of NRV. The 2021 Missoula FO RMP (DOI-BLM 2021) does not use the term Old Growth but does establish management direction for mature forests. Please see Section 2.3.3 for a discussion of an Alternative that was considered to exclude old growth from management.

3. **Comment Summary:** Commentor supports need for logging, highlights concern of wildland fire potential and habitat needs.

   Comment Response: Thank you for your comment. See Section 1.0, 1.1 Summary of Project and Purpose and Need for the project.

4. **Comment Summary:** Project fails to use RMP definition of old growth, failure to comply with Forest Plan OG standard for retention and viability violates NFMA.

   Comment Response: Thank you for your comment. The National Forest Management Act is not applicable to BLM-administered lands. The BLM prepared an RMP in compliance with FLPMA. This project is in conformance with the vegetation management classifications and activities directed in the Missoula RMP.

5. **Comment Summary:** BLM should provide a tally for planned treatments units.

   Comment Response: Thank you for your comment. The Appendix D: Maps section has been revamped to provide more detail and clarity on the location and extent of the proposed actions both for the Alternative 2 and the Sub alternative 2b. A complete stand list with proposed treatment is available from the Missoula Field Office.

6. **Comment Summary:** BLM should provide past, current, and RFF logging, grazing, mining and road building activities.

   Comment Response: Thank you for your comment. Descriptions of past logging, grazing, mining and road building are provided in Section 3.2.1. Current and Reasonably Foreseeable Actions are described in Section 3.2.2.1 as well as Appendix H.

7. **Comment Summary:** Did BLM consult on whitebark pine? What is the best available science for WBP?

   Comment Response: Thank you for your comment. Please see Section 1.5 Issues Identified but Eliminated from Detailed Analysis for a discussion of Whitebark Pine under the heading:
   - *How would the Alternatives affect federally threatened species Whitebark Pine?*

As stated in that section, based on those inputs described, the BLM determined that the Alternative 2 Proposed Action would have No Effect on WBP. The No Effect determination was documented in the Biological Assessment and the USFWS concurred with the determination in the Biological Opinion on 11/8/22. Although the 11/8/22 Biological Opinion misstated the determination on WBP as No Jeopardy, a correction from the USWFS dated 2/6/23 clarified the determination is No Effect. The Sub Alternative 2b has a reduced treatment area within the planning area and thus would also have No Effect.

In the summer of 2023 the USFWS updated their WBP range map (See Section 1.5 as described above) which does include parts of the planning area, but as the Missoula BLM has conducted rigorous forest sampling and inventory which has been used extensively to develop the Proposed Action (and Sub Alternative), there is no change in determination of effects.

8. **Comment Summary:** BLM should disclose road densities.
   Comment Response: Thank you for your comment. Current Road Densities are described in sections 3.4.1 and 3.4.2 of the EA: Open road density in the planning area is 2.46 mi /mi², while open road density is 3.49 mi/mi² on BLM-managed lands in the planning area. As no new open motorized routes are proposed, open road densities would remain unchanged with the proposed action. Density of closed and open permanent roads combined is currently 4.35 mi/mi². With the proposed action this would increase to 4.94 mi/mi² on BLM system lands and from 2.34 mi/mi2 to 2.38 mi/mi2 in the planning area (Biological Assessment Supplement #1 submitted to the USFWS 4-28-22. It is worth noting that the USWFS requested road density for the Garnet (Chamberlain) Geographic Unit (RMP 2020), and as stated in the Biological Opinion "The construction and use of 15.61 miles of permanent roads associated with the Clark Fork Face Project would allow for a very small (from 3.1 to 3.2 miles per square mile) increase in linear total road densities Garnet (Chamberlain) geographic unit."

9. **Comment Summary:** BLM should ensure sustainability is a component of the forest management. Only clear cut near homes for wildfire protection. Continue to consider habitat sustainability.

   Comment Response: Thank you for your comment. Managing forest ecosystems within their NRV will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994).

10. **Comment Summary**: Commentor is confused by the sentence (in section 2.1) that has ",,, and reduce the mean diameter of at least 50% of DF in the stand to less than 10". "it seems to me that by doing the harvest and prescribed burning you will be preferentially removing the smaller DF and therefore the stand mean diameter would be increasing not reducing.

    Comment Response: Thank you for your comment. As described in the EA, a primary objective of these treatments is reducing the Douglas-fir Beetle (DFB) Hazard Rating from high to low or moderate, according to the DFB infestation risk management guidelines released by the US Forest Service Forest Health and Protection (USFS FHP) group (Kegley 2011). Because DFB preferentially target densely stocked, large average diameter stands, reducing the DFB hazard would be achieved by reducing the stocking (as measured by Basal Area per Acre) and/ or reducing the average stem diameter. This is different from a fuels reduction or thin from below treatment that would increase the

average stem diameter by removing the smallest individuals due to the difference in objectives. This does not mean though that every tree over 10" diameter would be removed. As stated, the goal is simply to reduce the diameter of 50% of the stand, meaning that the rest of the individual trees would likely be over 10". Furthermore, by utilizing uneven-aged silvicultural systems and promoting establishment of regeneration, we would increase size, age and species diversity which would intern result in a stand with reduced DFB hazard.

11. **Comment Summary:** BLM should consider winch assist harvest practices on slope >40%

    Comment Response: Thank you for your comment. EA Section 2.1 states: "It is estimated that just over half (57%) of the treatment area would be skyline (cable) yarded with full or partial log suspension, while the remainder (43%) would be ground-based (tractor-skidded). Cable yarding would be used on slopes over roughly 40 percent and in all riparian protection zones". While site specific conditions may allow minor flexibility in the use of ground-based systems over 40% (isolated steeper pitches within larger ground based treatment units for example) the use of 40% as a guideline is in line with management on neighboring ownerships. Winch assist and similar operations are gaining popularity in the western US, but their use in MT is still very minor. While we anticipate analyzing for and potentially authorizing winch assist operations on future projects, that was not deemed a large need for this project due to the relatively few operators utilizing that equipment currently. Additionally, there may be a need for more study to adequately determine and disclose the potential effects of winch assist systems.

12. **Comment Summary:** Commentor points out that Douglas-fir can be an early or late seral species. Also points out where native people's burning should be considered along with lightning caused fire in the natural environment.

    Comment Response: Thank you for your comment. The following has been added to Section 3.2.1 Affected Environment: "Prior to Euro-American influence in the Clark Fork Face planning area, the composition, structure and density of the vegetation was a result of natural disturbance processes including indigenous people's activities, and succession." as well as, "As a result of timber harvest associated with European-American settlement and mining activities that took place in the Clark Fork Face planning area in the late 1800s and just after the turn of the 20th century (1920's), many large trees were removed. "

13. **Comment Summary:** BLM should bolster the no action affected environment to accurately depict the unhealthy conditions of the vegetation.

    Comment Response: Thank you for your comment. The following has been added to Section 2.0 of the EA: The National Fire and Fire Surrogate Study (Schwilk et al. 2009) evaluated measurements taken before and after fuel reduction treatments (prescribed fire, mechanical treatments, and the combination of the two) at 12 Fire and Fire Surrogate (FFS) sites located across United States to test their relative effectiveness. One of the test sites was within the Lubrecht Experimental Forest, which lies in and adjacent to the planning area (see "State- U of M lands" indicated on map 9.0 in the Appendix D). The Lubrecht site in the FSS included a stand that was harvested in 2001, a site that was harvested and also had prescribed burning preformed in 2002, and an untreated control stand. The FSS concluded that mechanical (harvesting) treatments, mechanical plus prescribed burning, and prescribed burning alone were all effective at reducing stand

density, improving residual tree vigor and reducing hazardous fuels as compared to the control, with each treatment exhibiting it's own unique strengths. The FSS was also explored whether treatment effected tree-level defense and stand structure resistance to Mountain Pine Beetle (MPB). Mortality from MPB was highest in the denser, untreated control and burn-only treatments, with approximately 50% and 39%, respectively, of ponderosa pine killed during the outbreak, compared to almost no mortality in the thin-only and thin-burn treatments. Therefore, the FSS reenforces the conclusions that without management under the No Action Alternative, forest health would continue to decline.

14. **Comment Summary:** BLM should disclose actions being taken to reduce fuels on adjacent private lands.

    Comment Response: Thank you for your comment. The following has been added to Section 3.2.1 of the EA: To increase the efficacy of fuels treatments proposed for BLM lands in the planning area, the BLM has also moved to address the hazards present on private lands and adjacent to homes. As of summer 2022, the BLM Western Montana District entered into a Cooperative Agreement with the MT DNRC wherein Community Assistance funds are made available for fuels reduction work on private lands in the CFF planning area (as well as other areas under other agreements). The Agreement term is five years with option to extend, and it is currently funded at $100,000 with opportunity up to $500,000. In November of 2022, the MT DNRC Forestry Assistance Bureau began targeted outreach, sending flyers and conducting site visits in the Wallace Creek drainage near the community of Clinton, MT. As of February 2023, 6 homeowners in that community and expressed interest or intent to utilize the funding for fuels reduction work on their land. It is the intent of the BLM and MT DNRC to keep the targeted outreach and progressing through the planning area one community or drainage at a time until all landowners in the planning area have been contacted, and it is recognized that this may require additional agreements in the future. By utilizing the Cooperative Agreement with the MT DNRC and providing Community Assistance funds, the BLM is facilitating and providing opportunity for fuels reduction on private lands across ownership boundaries.

15. **Comment Summary:** BLM should provide a map of all proposed clearcuts that will be larger than 40 acres.

    Comment Response: Thank you for your comment. In Section 2.1, the Timber Harvest with Prescribed Fire proposed action is described in detail. The objectives and methods proposed are described by HTG and broken into the warmer dryer types (HTGs 1 - 3) and the wetter cooler types (HTGs 4-6). Silvicultural systems will be applied per forest type and HTG as described in this section. Maps of the proposed treatments in Alternatives B and sub-alternative as well as the HTGs are found in the Appendix D.

16. **Comment Summary:** BLM should provide a tally of the age classes of timber on forested acres; tally of the age classes of timber on forested acres on all ownerships.

    Comment Response: Thank you for your comment. Appendix G provides the current condition, NRV and Desired Condition for all HTGs, as described by Primary Structural Component in percent of area for both BLM lands and all ownerships. Primary Structural Component is comprised of stem size class and canopy story development. Smaller size classes are often younger than larger size classes.

17. **Comment Summary:** Will the project improve forest health?

Comment Response: Thank you for your comment. Under both the proposed Alternative and sub-alternative, managing forest ecosystems within their NRV will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long-term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). Section 2.1 lists specific measure that would be taken to improve forest health as per the US Forest Service Forest Health and Protection (USFS FHP) recommendations.

18. **Comment Summary:** How does NRV align with Executive Order 14072?

    Comment Response: Thank you for your comment. EO 14072 states "It is the policy of my Administration, in consultation with State, local, Tribal, and territorial governments, as well as the private sector, nonprofit organizations, labor unions, and the scientific community, to pursue science-based, sustainable forest and land management; conserve America's mature and old-growth forests on Federal lands; invest in forest health and restoration; support indigenous traditional ecological knowledge and cultural and subsistence practices; honor Tribal treaty rights; and deploy climate-smart forestry practices and other nature-based solutions to improve the resilience of our lands, waters, wildlife, and communities in the face of increasing disturbances and chronic stress arising from climate impacts". The use of NRV is described in Section 3.1 and 3.2 of the EA: "NRV was developed by using "Historical Vegetation of Montana" (Losensky 1997) as a basis for understanding ecologically sustainable conditions. Managing forest ecosystems within their natural range of variability (NRV) will sustain native species and biodiversity; maintain ecosystem productivity; and provide for the long term sustainability of ecosystem values and services (Duncan et al 2010, Landres et al 1999, Swanson et al 1994, Haufler 1999, Morgan et al 1994). Current conditions were determined by using data collected within the planning area (BLM forest inventory 2014 – 2015 as well as subsequent field visits). The concept of managing forests to move towards or remain within their NRV was utilized to create desired conditions for the Clark Fork Face planning area. Section 3.2.3 Environmental Effects - Alternative 2 describes in detail how the proposed treatments would improve forest health and resiliency, reduce fire severity and shift the stands towards the midpoint of NRV. Habitat Type Groups with complete breakdown of Habitat Type Codes, NRV Current Condition and Desired Condition are listed in Appendix G of the Document. State, local and Tribal governments as well as nongovernmental organizations have been consulted and input considered.

19. **Comment Summary:** What are the acres to be logged?

    Comment Response: Thank you for your comment. As indicated in Section 2.1, 9,812 acres are proposed for Timber Harvest with Prescribed Fire under the proposed action/alternative 2, and 6,704 acres are proposed for Timber Harvest with Prescribed Fire under sub-alternative/Alternative 2b

20. **Comment Summary:** To protect life and property, should you have alternative to log next to homes?

    Comment Response: Thank you for your comment. The 2021 RMP (USDI-BLM 2021) Wildland Fire Objective 1 states: Use FMZs and WUI to guide and prioritize wildland fire and fuels management activities. In Section 2 of the EA you will see the description of the Fuels Management proposed treatment. As described therein, our methodology for delineating stands for Fuels Management incorporated the FMZs, proximity to homes and

WUI. In this way we have prioritized treatments in line with the RMP guidance and the purpose and need of this EA.

21. **Comment Summary:** Please review science on fire cycles.

    Comment Response: Thank you for your comment. Appendix G of the EA indicates current condition, fire regime, NRV and Desired Condition for all HTGs.

22. **Comment Summary:** Commentor supports full implementation of the proposed action; follow SMZ law and BMPs. Avoid no-harvest buffers and diameter caps. Concerned over declining forest health and risk to private improvements. Wishes to be kept informed of project updates.

    Comment Response: Thank you for your comment. The Proposed Action and Sub-Alternative is described in Sections 2.1 and 2.2. The Design Features for the Proposed Action and Sub-Alternative are the same and these required features are described in Appendix F. and include stipulations on pertaining to SMZ law and BMPs. Maps of the proposed treatments have been improved and are included in Appendix D. All commentors will be notified of updates to the EA, decision and plans for implementation.

23. **Comment Summary:** The BLM should consider flexibility with aspen.

    Comment Response: Thank you for your comment. Section 3.2.1 of the EA describes native deciduous trees such as Quaking aspen as a minor component of the forested stands with in the project area and as such a component of NRV. Section 2.1 the Proposed Action and Appendix F. Project Design Features for the Proposed action have been updated to include maintenance and enhancement of native deciduous populations.

Noxious Weeds

1. **Comment Summary:** BLM should disclose impacts on existing noxious weed infestations.

   Comment Response: Thank you for your comment. The following has been added to Section 1.5 Issues Identified but Eliminated from Further Analysis: How would the Proposed Action Effect Noxious Weed Populations. This determination is supported by an Issue Analysis Worksheet for Noxious Weeds available in the project record. The BLM has added Project Design Features to the Appendix F and incorporated by reference the 2019 Missoula Field Office Integrated Weed Management Plan and Missoula Field Office Integrated Weed Management Environmental Assessment MT-100-2008-019 May 13, 2009. Eliminated from detailed analysis because of design features and tiering or incorporating by reference.

Sensitive Plant Species

1. **Comment Summary:** The BLM must identify species for which population viability is a concern as "sensitive species" designation by the Regional Forester (FSM 2670.44)

   Comment Response: Thank you for your comment. The USFS manual on sensitive

species is not applicable. The BLM utilizes the Special Status Species Policy (Manual-6840) as updated by Instruction Memorandum No. MT-2020-012 (2020 Montana/Dakotas Special Status Species List).

2. **Comment Summary:** Enhancing limber pine is important. Why are only 306 acres identified for enhancement?

   Comment Response: Thank you for your comment. The BLM Missoula Field Office conducted a comprehensive Five Needle Pine inventory in 2013 - 2015. These limber pine populations were identified at that time and confirmed through subsequent field visits. All the limber pine populations within the Planning Area were proposed for the Limber Pine Enhancement treatment. Through the proposed action the BLM has maximized this proposed treatment to the furthest extent.

Soil, Water and Riparian.

1. **Comment Summary:** BLM should disclose amount of soil disturbance anticipated from the project and from previous activities.

   Comment Response: Thank you for your comment. Soil impacts for the Clark Fork Face project were analyzed in accordance with the Missoula RMP (USDI-BLM 2021) and BLM Manual 7100 (USDI-BLM-2008); these documents analyze soil based on the ability of soil to support a natural range of variability (NRV) for watershed management and there is no regulation or guidance specifying quantitative measures for soil compliance such as a standard for maximum permissible disturbance acreage. Soils were evaluated to understand how proposed treatments may impact vegetation and watershed NRV conditions. The Clark Fork Face project includes implementation of best management practices and project design features to avoid potentially disturbing activities and avoid or minimize impacts. This is common to the proposed action and sub-alternative. Because no significant impacts are anticipated to soil productivity, stability, or organic matter, soil impacts were not analyzed in detail. The soil impacts analysis worksheet documenting soil impacts is available in the Project Record, File. Past activities are analyzed in aggregate in the Affected Environment in Chapter 3.

2. **Comment Summary:** BLM failed to include analyses of soils or survey areas of important biological crusts. Project includes no map of soil crusts. How will the crusts be identified?
   Comment Response: Thank you for your comment. Biological soil crusts were brought forward as an issue but was eliminated from further analysis by inclusion of project design features to inventory and avoid sensitive soil sites prior to project implementation (see Appendix F: Design Features for the Proposed Action). Biological soil crusts will be identified by Field Office soil scientist staff during implementation unit layout for all treatments and these areas will be excluded from treatments, including no mechanical or foot traffic on these sensitive features.

3. **Comment Summary:** BLM should disclose any soils mitigation/remediation post project.

   Comment Response: Thank you for your comment. Soil mitigations for the Clark Fork Face proposed activities were included within the project as Project Design Features (see Appendix F). Soil impacts, including mitigation and remediation actions, are considered

during soil analysis of the natural range of variability; the Missoula RMP (USDI-BLM 2021) and BLM Manual 7100 (USDI-BLM-2008); do not include regulation quantifying soil disturbance and mitigation or remediation impacts.

4. **Comment Summary:** BLM should disclose sedimentation impacts for all streams in the area.

   Comment Response: Thank you for your comment. The Missoula RMP (USDI-BLM 2021) manages for water quality in cooperation with Montana DEQ for sampling, monitoring, and water quality determinations in compliance with the Clean Water Act. BLM and MT DEQ operate under an MOU that BLM will not contribute to water quality impairment in 303d or TMDL waterbodies; BLM reviews specific project areas for presence of impaired waterways and evaluates if BLM is further impacting water quality. These water quality evaluations are completed jointly with Properly Functioning Condition assessments following BLM Technical Reference 1737-15 and implementation BMP project reviews following MT DNRC BMP Handbook (2006). Riparian Management Objectives, including management of water quality indicators, are determined at a site-specific basis (Missoula RMP Riparian Management Actions 5 - 12).

   Water quality impacts, including sedimentation, were an issue not analyzed in detail because of the assumption that sediment from roadways and ground-based mechanical operations would be negligent. This determination was based on the CFF Project Design Features, which include implementation of forestry Best Management Practices (MT DNRC 2006), Montana SMZ Rules, Missoula RMP Riparian Management Area objectives, as well as Erosion and Sediment Control BMP Field Manual. Best Management Practice effectiveness is determined via MT DNRC BMP monitoring reports (MT DNRC Vessar et al. 2022); this monitoring shows that BMPs are applied correctly 96% of the time and were 96% effective in reducing stream sedimentation and erosion on federal lands (Vessar et al 2022). The Clark Fork Face project also determined site specific riparian management objectives; this information is available in Project Record.

5. **Comment Summary:** BLM should describe how water quality will be analyzed and managed. Show compliance with the MOU with the DEQ. Show compliance with CWA. Do you use US EPA Water Quality certificate?

   Comment Response: Thank you for your comment. The Missoula RMP (USDI-BLM 2021) manages for water quality in cooperation with Montana DEQ for sampling, monitoring, and water quality determinations in compliance with the Clean Water Act. BLM and MT DEQ operate under an MOU that BLM will not contribute to water quality impairment in 303d or TMDL waterbodies; BLM reviews specific project areas for presence of impaired waterways and evaluates if BLM is further impacting water quality. These water quality evaluations are completed jointly with Properly Functioning Condition assessments following BLM Technical Reference 1737-15 and implementation BMP project reviews following MT DNRC BMP Handbook (2015).

   The BLM applies for EPA section 404 permits (Water Quality Certificates) when completing new construction or significant reconstruction of structures in navigable waterways; however, much of the stream work proposed under the Clark Fork Face project will be completed under Nationwide Permit 3a (Maintenance) (33 CFR 330.3; NWP Final Notice, 86 FR 73522) that allows for maintenance activities such road work and culvert upgrades and replacements without additional consultation. Additionally,

BLM complies with the Montana Stream Protection Act, and submits SPA 124 Permits to MT Fish, Wildlife, and Parks and MT DNRC prior to any in-stream project implementation.

Riparian Management Objectives and discussed and Riparian Conservation Area buffer widths are listed in Section 1.5 Issues Identified but Eliminated from Detailed Analysis under the heading:

- *How will mechanical harvest operations impact lotic and lentic riparian features properly functioning condition (PFC) status?*

See also Section 11.0.3 and 11.0.4 for Project Design Features specific to riparian areas and water quality.

6. **Comment Summary:** How will construction of new roads impact hydrologic function?

   Comment Response: Thank you for your comment. Road construction impacts to hydrologic function was an issue considered, but not analyzed in detail (see section 1.5, Issues Identified but Eliminated from Detailed Analysis, and Appendix F. Design Features for the Proposed Action). The project assessed miles of new and temporary roads, and the roads' spatial location on a hillslope, miles of road within riparian habitat conservation areas, and number of stream crossings on perennial streams. Of the 22 miles of proposed new road construction (16 permanent, 6 temporary), 0.39 miles of road (1.7% of total road miles) intersected within riparian conservation areas of perennial streams and only 0.16 miles (0.7%) of new road construction (temp road) were located within fish bearing stream management areas (Impact Analysis Worksheet and supporting documentation are available in the Project Record). The project included 4 new stream crossings, all of which are located on intermittent stream reaches (Impact Analysis Worksheet and supporting documentation are available in the Project Record).

   All new road construction is subject to meeting Forestry Best Management Practices requirements and design criteria from the Missoula RMP (USDI-BLM 2021); this includes road drainage, specifying road location to minimize riparian impacts, and requirements to provide for and/or improve fish passage on new, replacement, and reconstructed roads (see Appendix F. Design Features for the Proposed Action).

7. **Comment Summary:** BLM should analyze impacts to fish and water quality including sedimentation, increases in peak flow, channel stability, risk of rain on snow events, and increases in stream water temps. Disclose locations of seeps, springs, bogs and other sensitive wet areas and project effects on those area.

   Comment Response: Thank you for your comment. Water quality and fish habitat were assessed for the Clark Fork Face project through the analysis framework of the Missoula Resource Management Plan (USDI-BLM 2021). This analysis tiers to the assessment of impacts fish habitat and water quality from forest vegetation treatments analyzed in the Missoula Resource Management Plan EIS. Restoring vegetation conditions towards mid-range NRV results in beneficial basin-scale hydrologic conditions that reflect historic environmental factors over time (DOI Missoula RMP FEIS 2021). The Missoula Resource Management Plan manages for water quality in cooperation with Montana DEQ in compliance with the Clean Water Act. BLM and MT DEQ operate under an MOU that BLM will not contribute to water quality impairment in 303d or TMDL waterbodies; BLM reviews specific project areas for presence of impaired waterways and evaluates if BLM is further impacting water quality using Properly Functioning

Condition assessments (BLM TR-1737-15) as well as aquatic habitat monitoring.

Internal scoping resulted in dismissing fish and fish habitat from an issue analyzed in detail (see section 1.5, Issues Identified but Eliminated from Detailed Analysis, and Appendix F. Design Features for the Proposed Action). Scoping considered all aspects of the proposed action coupled with forestry BMPs and Riparian Habitat Management Objectives, leading to a determination that effects to fisheries would be eliminated or minimal, consistent with analyses of similar projects within the field office (Impact Analysis Worksheet and supporting documentation are available in the Project Record).

Riparian features included seeps, springs, bogs, and sensitive wet areas were preliminarily identified during field survey for the Clark Fork Face project; these features are mapped and included for project unit layout during implementation. Additional field survey prior to implementation is also included as a design feature for the project to ensure sensitive riparian areas are avoided from ground-based disturbances (see Appendix F. Design Features for the Proposed Action).

8. **Comment Summary:** The RMP defers roads effect analysis on aquatic systems. Did the BLM conduct a full analysis of roads on aquatic systems? Do the roads impact the RMOs?

   Comment Response: Thank you for your comment. The Clark Fork Face project reviewed road impacts to hydrologic function and aquatic habitat by assessing miles of new and existing road within Riparian Conservation Areas (21 miles on BLM lands), number of stream crossings culverts used during haul (88 on BLM lands), and further analysis of those features on fish bearing streams with BLM sensitive species Bull Trout and Westslope Cutthroat (Impact Analysis Worksheet and supporting documentation are available in the Project Record) . The project includes 24 miles of haul roads in BLM sensitive species occupied streams (all lands) and 17 stream crossings (all lands). The majority of these road miles adjacent to occupied sensitive species habitat are on paved routes that have negligible sediment input and are outside BLM management control. New road construction impacts within Riparian Conservation Areas were negligible (see response to comment above: How will construction of new roads impact hydrologic function?). Haul road use and road construction were issues considered, but not analyzed in detail; rationale dismissal was based on project design which includes implementation of Best Management Practices and standard mitigations from the Missoula RMP, Appendix P (see section 1.5, Issues Identified but Eliminated from Detailed Analysis, and Appendix F. Design Features for the Proposed Action).

9. **Comment Summary:** BLM failed to consider the effects of the existing road system on bull trout.

   Comment Response: Thank you for your comment. Internal scoping led to the determination that the effects to bull trout and bull trout designated critical habitat would not be analyzed in detail for the Clark Fork Face project (Impact Analysis Worksheet and supporting documentation are available in the Project Record). Additionally, Section 7 consultation would not be necessary as the BLM determined there would be No Effect to bull trout or bull trout designated critical habitat from the proposed action (see comment response Section 15.17 above). The project was designed to ensure compliance with the Aquatic and Riparian Habitat Conservation Strategy and uses Riparian Conservation Area buffers to manage for fish habitat; generally, for fish bearing streams this buffer is 300 feet on each side of the stream. Project design features, including road BMPs and

implementation of riparian management objectives also provide protection to waterways (Appendix F. Design Features for the Proposed Action). Additionally, effects from the existing road system as well as the proposed new construction were considered during internal scoping and issue development (Impact Analysis Worksheet and supporting documentation are available in the Project Record). The distant proximity of these roads with regard to bull trout habitat eliminated concern associated with sediment discharge and it's effect on bull trout/bull trout DCH (see comment response Section 15.17 above). Potential effects to bull trout and bull trout habitat are also dismissed due to the unmeasurable/negligible extent considering the type of habitat found downstream of the treatment areas; example given is how small tributaries and headwaters of Union Creek may experience short term increases in turbidity due to sedimentation, but many miles of travel time allow for sediment to settle out. Sediment that ultimately reaches the Blackfoot river via Union Creek would not measurably impact water quality of the Blackfoot river. Effects associated with sediment input are generally considered harmful to bull trout spawning/rearing habitat; the Blackfoot river is foraging, migration and over wintering habitat.