



United States Department of Agriculture
Forest Service

Marshall Woods Restoration Project

Final Decision Notice, Finding of No Significant Impact, and Supplemental Response to Comments

Missoula Ranger District, Lolo National Forest, Missoula County, MT
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FINAL DECISION NOTICE
MARSHALL WOODS RESTORATION PROJECT
U.S. FOREST SERVICE
MISSOULA RANGER DISTRICT, LOLO NATIONAL FOREST
MISSOULA COUNTY, MONTANA

DECISION

This decision notice (DN) documents my decision and rationale for the actions I am authorizing for the Marshall Woods Restoration Project. This decision reflects many hours of dedicated time by not only the Forest Service's interdisciplinary team of specialists, but also by our partners and the public. The high level of engagement by individuals, groups, and agencies, combined with the environmental analysis were all important and necessary components for me to make an informed decision (see the Public Involvement section of this document as well as the extensive draft DN Appendix A - Response to Comments and final DN Appendix A – Supplemental Response to Comments). I appreciate the time, energy, ingenuity and viewpoints that were contributed by so many. The Environmental Assessment (EA) did not identify a preferred alternative in order to allow for more collaboration and insight by all interested parties, and that input has been instrumental in the development of this decision.

Based on my review of environmental effects disclosed in the EA, the Lolo Forest Plan, the Project File, and in consideration of comments received on the EA, and two objections received on the draft DN, I have decided to implement components of two of the action alternatives:

Alternatives C and D.

My decision authorizes treatment on approximately 3,678 acres and includes one Forest Plan amendment under the 2012 Planning Rule (36 CFR 219.13(b)(3)). The amendment is summarized below and discussed in more detail on page 29 of the EA.

I have decided to authorize a mix of actions analyzed under Alternatives C and D. My decision precludes commercial timber harvest and temporary road construction within the Rattlesnake National Recreation Area (RNRA) and authorizes the following land management activities:

- Commercially thin ponderosa pine/Douglas-fir stands and mixed conifer (western larch, Douglas-fir, ponderosa pine and lodgepole pine) stands on approximately 266 acres primarily using skyline yarding (Unit 1 – Thinning and Prescribed Fire). This may be followed by thinning or slashing non-commercial understory trees, handpiling slash, and/or prescribed burning. Trees will be removed to improve species composition and residual tree quality (i.e. improvement cut) and removing individual dead, dying, or diseased trees.
- Non-commercially thin (less than 8 inches dbh), hand pile and burn about 314 acres (Units 70 and 71).

- Non-commercially thin (less than 10 inches dbh), hand pile and burn about 357 acres (Units 6 and 90-92).
- Ecosystem Maintenance Burning (EMB) proceeded by understory slashing/thinning (Units 5 and 60-66) on about 1,055 acres.
- Young stand thinning (small diameter trees) and prescribed burning on about 467 acres (Units 80-82 and 84).
- Restore Homestead and Poe Meadows (about 40 acres) by non-commercially removing the conifer encroachment and encouraging aspen regeneration (Units 100 A and B).
- EMB on approximately 729 acres (Unit 101).
- Complete site preparation and reforestation on about 450 acres (Unit 200).
- Decommission about 7.4 miles of road.
- Convert about 1.4 miles of road to trail.
- Construct about 0.2 miles of system trail to connect NFS Road #53414 to NFS Road #2122.
- Add about 0.4 miles of existing trail to the official trail system.
- Store about 6.7 miles of existing road (see EA Appendix E).
- Complete the road maintenance Best Management Practices (BMP) needed for the Spring Creek Bridge and Road 99/Trail 515 as described in actions common to all alternatives (EA pages 27-29). This includes a brushing height of 10 feet on Road 99/Trail 515 in compliance with the LACs for this area.
- Replace an undersized culvert on NFS Road #2122 to allow for fish passage at the Marshall Creek crossing.
- Implement forest restoration public education with the assistance of partners and volunteers.
- Implement the applicable resource protection measures and planned monitoring to avoid or minimize environmental harm (DN Appendix B and EA p. 81).
- Implement a site-specific non-significant Forest Plan amendment to correct Management Area (MA) designation mapping errors. Section 33 of the Marshall Woods project area was acquired by the Lolo National Forest (NF) through the Montana Legacy Project in 2010. This decision changes the MA allocation in Section 33 from MA 23 (partial retention – winter range) to a MA 25 (partial retention – timber).

The Selected Action also includes some minor modifications for slash treatment; for instance, hand piling and burning, slashing, and/or underburning has been determined to be the most technically feasible in some areas given residual stand density and anticipated mortality. Minor fuels treatment modifications, such as this are within the effects analyzed in the EA, and better address the conditions on the ground given the selection of a components from two alternatives (see Table 1).

The Marshall Woods Restoration Project EA is incorporated by reference in this DN. The approved vegetative treatments are summarized in the table below; more unit specific detailed information about the activities can be found within EA pages 27 to 80.

Table 1. Vegetation Treatment Summary

Unit	Silvicultural Prescription	Fuels Treatment	Acres	Logging System	Treatment in RNRA
Thinning Treatments and Prescribed Fire					
1	IC	UB	266	SL/T	N
Subtotal			266		
Ecosystem Maintenance Burning Preceded by Understory Slashing/Thinning					
Non-commercial Thinning and Underburning					
5	STT/EMB	UB	94	N/A	Y
60	STT/EMB	UB	38	N/A	Y
61	STT/EMB	UB	144	N/A	Y
62	STT/EMB	UB	234	N/A	Y
63	Slash/EMB	UB	254	N/A	N
64	STT/EMB	UB	137	N/A	N
65	STT/EMB	UB	91	N/A	Y
66	STT/EMB	UB	63	N/A	N
Subtotal			1,055		
Young Stand Thinning Followed by Prescribed Fire					
80	YST	LS	27	N/A	N
81	YST	LS	175	N/A	N
82	YST	LS	230	N/A	N
84	YST	LS	35	N/A	N
Subtotal			467		
Non-commercial Thinning and Handpiling and Burning					
6	STT	HPB	109	N/A	Y
70	STT	HPB/UB*	85	N/A	Y
71	STT	HPB/UB*	229	N/A	Y
90	STT	HPB	106	N/A	Y
91	STT	HPB	73	N/A	Y
92	STT	HPB	69	N/A	Y
Subtotal			671		
Meadow and Aspen Restoration					
100A	Slash/JPB/Fence	JPB/HPB	19	N/A	Y
100B	Slash/JPB/Fence	JPB/HPB	21	N/A	Y
Subtotal			40		
Ecosystem Maintenance Burning					
101	EMB	UB	729	N/A	Y
Subtotal			729		
Site Preparation and Reforestation					
200	Site Prep/Plant	UB/BB/JPB	450	N/A	N
Subtotal			450		
Grand Total			3,678		

IC = Improvement Cut; YST = Young Stand Thinning; STT = Small Tree Thinning; LS = Lop and Scatter; EMB = Ecosystem Maintenance Burn; JPB = Jackpot Burn; UB = Underburn; BB = Broadcast Burn; MP = Machine Pile; PB = Pile Burn; HPB = Hand Pile and Burn; T = Tractor; SL = Sky Line

* Underburning may not be prescribed in these areas due to residual stand density and anticipated mortality.

CHANGES FROM THE DRAFT TO FINAL DECISION

Two objections were received for this project. After a resolution meeting was conducted I was instructed by the Reviewing Official, Lolo National Forest Supervisor Tim Garcia, to: 1) review responses to comments where additional or clarifying information may improve the context or understanding; and, 2) re-evaluate treatment effectiveness of treating by hand Units 2-6, 70, and 71 within the selected alternative of the Draft Decision Notice. This final decision includes a supplemental response to comments (Appendix A) and further elaboration on treatment efficacy in Units 2-6, 70, and 71.

After further review I have decided not to authorize any work in Units 2, 3, and 4. I have found that treating these three units (271 acres) using an 8" diameter limit would not meet the purpose and need of insect, disease, and fire resiliency. The defined scales and thresholds for resilience are not met, therefore rendering the treatment ineffective and comparable to the No Action Alternative as modeled (Forested Vegetation Specialist's Report pp. 5-6 and 26).

After the reevaluation I have chosen to still include treatments in Units 5, 6, 70 and 71 due to the juxtaposition of these units on the landscape. These units are located between and adjacent to Units 60-62 and 64 as well as 90-91 and therefore it is important to address the understory trees and surface fuels where possible to allow for prescribed fire treatments to move through that landscape. This treatment reduces some crown fire initiation, in the short-term (<20 years), but would not lower bark beetle hazard markedly resulting in low to moderate efficacy (Forested Vegetation Specialist's Report pp. 40-41).

Treating Units 70 and 71, as noted in the draft decision, will provide marginal ecological benefits over the no action, however, given these units are immediately adjacent to the main trailhead and Road 99/Trail 515 receives the greatest use, marginal ecological benefits in these locations are warranted to allow for other potential benefits to firefighter ingress/egress in the WUI (Forested Vegetation Specialist's Report, p. 35). Following treatment, some benefit over no action would occur under moderate burning conditions; however, under severe burning conditions (85 degrees, 25 MPH 20' winds) near 100% mortality could be expected in the Main Rattlesnake corridor (M5-40, M5-41, M-42).

CHANGES IN THE ENVIRONMENTAL ASSESSMENT

During the public comment and objection periods minor errors and inconsistencies were noticed in the EA and changes were made for clarification and correctness. These changes do not warrant another public comment period, change the impacts of the alternatives, nor do they change my decision rational. The changes that were made are listed in Appendix C – EA Errata.

DECISION RATIONALE

In selecting a blend of Alternatives C and D, I have determined that my decision is consistent with all laws, regulations, and agency policy. I have considered the potential cumulative effects with past, present and reasonably foreseeable activities. I believe that the actions I am approving provide the best balance of management to respond to the purpose and need, environmental concerns, social issues, and public comments while complying with all applicable laws and regulations. The considerations I relied upon to make my decision on this project included:

- Achievement of the project's purpose and need
- Relationship to environmental concerns, social issues, and public comments

While this decision does not address what I believe to be the full extent of the ecological and wildland-urban interface (WUI) issues and needs, I believe this decision strikes a balance between the social and ecological concerns.

My decision is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of public input and responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

Meets Project's Purpose and Need

I believe the blend of activities in Alternatives C and D will meet, to varying degrees, all four of the project objectives and move the Marshall Woods area toward the desired conditions.

Restore functioning ecosystems by enhancing natural ecological processes

- Maintain and enhance resilience and resistance of vegetative communities while ensuring visual quality.
- Maintain and enhance terrestrial habitats for forest vertebrates.
- Maintain and enhance aquatic habitats and water quality.

The actions I am authorizing in this decision will to varying degrees: 1) reduce crown fire potential and restore fire as an ecological process focusing on low intensity, high frequency and mixed severity fire regimes, and increased resilience to surface fire and bark beetles; 2) maintain or increase the species composition of fire-resistant shade-intolerant species (western larch, ponderosa pine); and retain large diameter, ponderosa pine and western larch trees and create stand conditions that could provide large trees in the future; and, 3) provide for age class and species structural diversity to reduce vulnerability to stressors (fire, insects, and disease). These actions will also promote resilient stands by focusing on removing small diameter trees; thinning; and using prescribed fire to modify fire behavior, while maximizing the retention of large trees as appropriate for the forest type.

The Selected Action does not authorize treatments in Units 2-4, and in those units the goal of restoring forest function will not be met. In Units 5 and 6, the bark beetle hazard and susceptibility will not be reduced and in these units efficacy of hand treatments will be minimal.

While some localized individual tree resilience will occur, stand resilience to mountain pine beetle would not change significantly (EA p. 117).

Treating Unit 1 (266 acres; this is outside of the RNRA) by thinning and using prescribed fire will increase the average diameter at breast height (DBH) of the residual stand as well as the proportion of ponderosa pine and western larch trees, and increase stand resilience to insects, disease, and wildfire. Reducing the density of the canopy and retaining some seedling/sapling thickets in this stand will also increase nesting and foraging potential for open forest associates, particularly flammulated owls.

The Selected Action will also restore sites with disease resistant shade-intolerant species adapted for resilience to the current and future environmental stressors on 450 acres or 3.5% of the landscape in Section 33. It will also restore meadows, aspen, and open grown forests and shrublands on 769 acres or 5.9% of the landscape, which includes the areas known as Strawberry Ridge and Poe Meadows.

Additionally, young stands and dry, sparsely forested aspects that will be treated will have less competition and will be more resilient to drought, insects, disease and fire, increasing wildlife habitat diversity.

Implementing the road maintenance Best Management Practices (BMP) needed for the Spring Creek Bridge and Road 99/Trail 515 (EA pp. 27-28), replacing the undersized culvert on NFS Road #2122, and the road storage and decommissioning will build on previous water resource improvements in the area. These activities will reduce sediment inputs into streams in the long-term to maintain and enhance aquatic habitat and water quality.

Emulate fire's natural role on the landscape through vegetative treatments including prescribed fire.

- Promote ecosystem health with prescribed fire to distribute beneficial fire effects to areas within the wildland urban interface (WUI).
- Integrate project objectives with the Missoula County Wildfire Protection Plan (CWPP).
- Decrease high intensity wildfire potential; enhance firefighter efficiency and safety within the WUI.

The treatments in the Selected Action will reduce ladder fuels, raise crown base heights, and reduce surface fuel loadings. By reducing hazardous fuels, ladder fuels, and surface fuel loadings in multistoried mixed conifer stands, these treatments will aid in reducing wildfire hazard in the near-term. The treatments will also increase the effectiveness and safety of initial attack resources. Removing surface and ladder fuels will decrease the chance of crown fire initiation. As a result, fire intensity at the fireline will be lowered creating a fire behavior that is more manageable by initial attack ground resources. This will be particularly important within proximity of private ownership.

Prescribed fire treatments in the Marshall/Woods area and in the main Rattlesnake corridor will reduce fuel continuity and provide for age class diversity. Targeting concentrations of dead and down fuels and pockets of pine beetle mortality will create a mosaic pattern on the landscape resulting in discontinuous fuels and a reduction in the probability of large crown fire.

Provide education opportunities to build support for restoration.

- Provide examples of forest restoration activities for education and interpretation (e.g., develop brochures for self-guided tours of treatment areas, use local news media, interpret sites within the Upper Rattlesnake Historic district along with the project implementation, etc.).

The actions I am authorizing under this decision will not offer the full spectrum of restoration education opportunities that Alternatives B or C would have offered; however, there are still opportunities to interpret the historic district sites along the main Rattlesnake corridor, as well as the vegetative restoration treatments in Unit 1. Also it is important to note that the collaborative public involvement process for this project has provided education opportunities and has highlighted the challenges of resource management. It is a demonstration of how important discussing and understanding opportunities and constraints are before moving forward (see Draft DN Appendix A, response to comment #22).

Provide for diverse trail-based recreation opportunities and reduce road density in Section 31, consistent with NRA management plan.

The trail development and road to trail conversions in the Selected Action will positively benefit recreationists by providing a travel system within Section 31. In addition, road decommissioning in Sections 31 and 33 will have positive impacts on aesthetics and decrease road density and sediment delivery to nearby streams.

PUBLIC INVOLVEMENT

The concept for the Marshall Woods Restoration Project was developed collaboratively with members of the Lolo Restoration Committee (LRC). The project was listed as a proposal on the Lolo NF Schedule of Proposed Actions (SOPA) which has been updated periodically during the analysis. We invited interested parties through direct mailings and web site postings, as well as public meetings and field trips, to review and comment on the proposal before the EA was drafted. We also circulated and posted the EA and specialist reports on the Forest website for review and comment.

Draft DN Appendix A, response to comment #22 explains in more detail the extensive public involvement and collaboration efforts for the project. The EA (Appendix A: Consultation and Coordination) also lists the agencies, groups and individuals consulted. During development of the EA numerous meetings and presentations were conducted with the LRC, Conservation Lands Advisory Council, Audubon Society, Missoula Nordic Club, Missoula Mayor's Office and Ward 1 Aldermen, Mountain Bike Missoula, City Parks and Recreation Committee, Backcountry Horsemen, Society of American Foresters, and Missoula Fire Protection Association, Montana Wilderness Association, and Air Quality Board (Project File, Item E-41).

Environmental concerns, social issues, and public comments.

While any management action has the potential to cause an effect, I have considered the wealth of information provided by the environmental analysis completed for this project and have concluded that the actions I am authorizing will have no significant impact on the human environment.

Implementation of the Selected Action will be moderately responsive to several of the 13 restoration principles developed by the Montana Forest Restoration Committee (MFRC) (EA page 18; Project File, Item K-19). The MFRC is a non-profit, consensus-based collaborative group that found common ground in supporting restoration activities conducted to accelerate the recovery of ecological processes and to enhance societal and economic well-being. It is the parent organization of the LRC.

During the EA comment period, we received 207 letters from members of the public. Some comments expressed concerns about environmental impacts from implementing the Marshall Woods Restoration Project, while others expressed concerns about the need for quick action at a broader scale to create a more resilient forest, especially adjacent to private lands. I respect the opinions of all who commented. My staff has responded to these comments (DN Appendix A and Draft DN Appendix A), and I have concluded that the project design and resource protection measures assure no significant environmental impact. I elaborate on some of my considerations below:

Recreation

The majority of the comments we received were related to recreation impacts. There were a number of comments concerning compliance and interpretation of the resource laws and regulations associated with the Rattlesnake National Recreation Area (RNRA). By selecting a blend of Alternatives C and D and incorporating the appropriate resource protection measures (DN Appendix B), I feel that the majority of these concerns have been addressed. No commercial thinning or haul will occur in the RNRA; vegetation management treatments in the RNRA (Management Area 28) will be conducted by hand crews.

Questions related to the effects of non-commercial vegetation treatments on the recreation resource and visitor experience are disclosed in the EA (Alternative D Cumulative Effects, page 290). The EA explains that effects will be negligible or minimal and short-term. Visitors will have the opportunity to appreciate and understand the benefits of the treatments. Commercial harvest of Unit 1, which is outside of the RNRA, will include time delays or closures along NFS Road #2122 (EA, page 284).

Fire and Fuels

Some comments raised concerns over the effectiveness of fuel treatments reducing the impacts of wildfire on the WUI. Although focusing attention on the Home Ignition Zone is effective in reducing the risks posed by wildfire to homes in the WUI, effectiveness relies on the landowner and has limited benefit to values-at-risk other than the individual structure. The purpose and need of the Marshall Woods project includes restoring functioning ecosystems by enhancing natural ecological processes. Because the ecosystems within the project area are fire-dependent ecosystems, emulating fire's natural role on the landscape through vegetative treatments

including prescribed fire not only restores functioning ecosystems but simultaneously reduces the potential severity of wildfire impacts to both the private lands and the surrounding area that make up the WUI. This is important especially in this area as it serves as a backup municipal watershed for the City of Missoula and is a highly visited National Recreation Area. The actions I am authorizing with this decision will be effective in parts of the project area at reducing the potential initiation of crown fires which can lead to devastating fire effects and threaten homes within the WUI. These treatments selected for the units summarized in Table 1 are expected to modify fire behavior in treatment areas for at least the short term.

In Summary

I have selected a blend of Alternatives C and D because it will provide the best approach to responding to the public while partially achieving the project's objectives and Forest Plan goals.

FINDING OF NO SIGNIFICANT IMPACT

After considering the environmental effects described in the EA for each alternative, I have determined that the blend of Alternatives C and D that I have selected will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared.

I base my finding on the following:

Impacts may be both beneficial and adverse.

My finding of no significant environmental effects is not biased by the beneficial effects of the action. The action will, to some degree, promote resilient stands and modify fire behavior while resulting in minimal impacts to the recreation resource and associated use of the area. While Alternatives B and C, with resource protection measures, would better achieve the project's vegetation restoration and fuels reduction objectives over both the near and longer term, I have determined that blending Alternatives C and D is the best approach to avoiding adverse impacts to the public while providing some beneficial effects to forest resources.

Recreation

The effects of implementing my decision on recreation will vary by the activity as follows (also refer to EA Appendix F):

Management Activity in General (EA, p. 279) – Implementing this decision will increase management activity in the RNRA, Woods Gulch, and Marshall Canyon areas. This will include increased administrative traffic on RD99/TR515 and Road #2122 which accesses TR513, TR513.2 and TR326. Vehicles will also be present along trails and in meadows where crews will be working. These vehicles may interfere with recreational activities causing the public to temporarily step off the road/trail or take another route. The effects of this increase in management activity will be intermittent, minimal, and short-term.

Thinning in Unit 1 (EA, pp. 284-285) - Tree harvest and removal in Unit 1, which is outside the RNRA, will require temporarily closing Road #2122 because it will be used for landing decks and hauling activities. Closing this road temporarily will impact dog walking, mountain biking, hiking, trail running, and, in the winter, cross-country skiing and snowshoeing. Hunters may also be temporarily displaced if ground conditions remain favorable during hunting season and harvesting operations continue. While these activities will be readily apparent, over the long-term the effects of commercial thinning will be seen as beneficial to the area for the majority of the recreating public (i.e., increasing resilience to disturbances, reducing stand density and maximizing the retention of large trees to restore and promote fire-resilient stands).

Non-commercial Thinning (EA, p. 280) - Presence of thinning crews will be evident throughout implementation of the project. Crews will be operating chainsaws during “business hours”. Recreationists will hear the chainsaws and potentially see the crews depending on the location of the thinning. This type of work was completed in the Sawmill portion of the RNRA in 2009-2011. In general, the recreationists in the area were not largely impacted by these actions, and they did not voice concerns throughout the operations. Given that history, adverse effects on recreational users will be minimal and short-term.

Prescribed Burning (EA, p. 275) – During prescribed fire operations, smoke may increase in the RNRA, Woods Gulch, and Marshall Canyon areas which could affect recreationists using trails within the project area. Recreationists sensitive to smoke may temporarily choose to use a different area. Other recreationists may simply notice the smell of smoke or see and pass through the smoke depending on the location of the burning operation. Impacts to recreational users generally depend on the perception of recreation constraints from fire and fire management as well as place attachment (Chavez et al 2008). Most recreationists have experienced some level of smoke from wildfires or prescribed burns. The RNRA receives substantially less use in the spring and fall than compared to midsummer so the number of recreationists that will be affected will be less during spring and fall burns.

Aspen/Meadow Restoration at Homestead and Poe Meadows (EA, p. 282) - Overall effects of the aspen/meadow restoration activities, which includes removing conifer encroachment, will be minimal and short-term due to the small size of the proposed treatment units (i.e., total is 40 acres). The beneficial effects of the aspen/meadow restoration will last for decades providing long-term enjoyment for users.

Road (RD99/TR515) Improvements (EA, p. 276) – Activities to improve the drainage along RD99/TR515, which were included in all alternatives including No Action (i.e., road maintenance), will cause delays in recreation activities and possibly temporary closures along RD99/TR515 while the improvements are being made. The drainage improvement will prevent trail widening since the recreationist will not need to avoid puddles and cause vegetation damage to the side of the trail. Brushing RD99/TR515 to standards (i.e., 10 feet high) will allow a greater line of sight and width for passing, especially in congested areas. These improvements will result in minimal short-term impacts during implementation; however, these improvements will have long-term benefits to recreational users.

Spring Creek Bank Improvements (EA, p. 283) - Although creek access is popular along RD99/TR515, bank improvements at the Spring Creek Bridge and trail removal will cause only negligible to minimal effects to recreation access.

Culvert Upgrade (EA, pp. 283-284) - The culvert upgrade on Road #2122, which is outside the RNRA, will temporarily affect recreational use during removal and installation. This access point is popular with dog-walkers, runners, mountain bikers, berry pickers, hunters, and hikers as this road connects to trails in Woods Gulch, Upper Marshall Creek, and Mount Jumbo. The culvert replacement will take about three to seven days. This will result in a minimal, short-term impact to recreation. Informing the public (e.g., press releases, signage, and website postings) will reduce the impact (EA p. 73, Resource Protection Measure #73).

Trail Development (EA, p. 282) - The 0.2 mile segment of trail that will be constructed in Unit 81 to connect Road #53414 (which will be converted to a trail under this decision) will create an additional loop in Woods Gulch and Marshall Canyon. New trail construction and converting old roads into trails in Sections 31 and 32 (Units 81 and 82) will provide more non-motorized recreational opportunities and allow recreationists to expand activities from Woods Gulch into Marshall Canyon.

Road Decommissioning (EA, p. 283) - The road decommissioning in Sections 31, 32, and 33 (Units 66, 82, 81, 84, and 200) will generally not be noticeable to the recreating public and will have a negligible impact to recreation (see EA Appendix E).

Visual Quality

(EA, pp. 292 and 294) The commercial thinning in Unit 1 will meet visual quality objectives because resource protection measures will be used to reduce the visible effects of harvest activities. The effects of the non-commercial treatments will be minor, slightly altering the landscape character; however, the treated areas will recover within a growing season thus not changing the landscape character in the long-term.

Forested Vegetation

Ecosystem Maintenance Burning Preceded by Slashing or Thinning (EA, pp. 112) – This treatment will lower bark beetle hazard, increase resilience to fire and insects and diseases while favoring at-risk shade-intolerant species increasing resilience and resistance of vegetative communities on about 7% of the landscape. However compared to the treatment proposed in Alternative B, this treatment will only provide limited improvement over the current condition within the Rattlesnake NRA in Unit 5.

Ecosystem Maintenance Burning (EA, pp. 113) – Under this treatment, the landscape age class and structural mosaic will be improved by breaking up landscape homogeneity and potentially introducing new seral components in an irregular distribution across approximately 6% of the analysis area. This treatment will likely result in pockets of tree mortality from direct fire effects and/or subsequent bark beetle attack. Fire will be restored as an ecological regulating process improving forest structure, composition and function within the RNRA. This treatment will help promote a diverse age class and species mix and spatially heterogeneous and complex vegetation structure which will provide a landscape that is more resilient to climate change in the longer-term (Joyce et al., 2008).

Thin and use Prescribed Fire (EA, p. 115-116) – Commercially thinning and burning Unit 1 will reduce ladder fuels and break up crown continuity reducing the likelihood of crown fire occurrence. This treatment will increase resilience to stand-replacing wildfire and insect and

disease outbreaks on 2% of the landscape. Treatment at this scale does not meet the objective of landscape scale resilience.

Non-commercial Thinning followed by Hand piling and Burning (EA, pp. 117-118) – Hazardous fuels will be reduced in areas immediately adjacent to private land with limited road access. While this will reduce crown fire initiation and improve public and firefighter safety, it will not substantially increase stand resilience to bark beetles.

Meadow and Aspen Restoration at Homestead and Poe Meadows (EA, p. 119) – This treatment will perpetuate key at-risk species through regeneration and protection. It will maintain the historic meadows providing cover type and structural diversity, important elements of a resilient landscape.

Site Preparation and Reforestation (EA, pp. 120-121) – This treatment will increase the distribution of ponderosa pine and western larch providing more resilience to insect and disease outbreaks. Reforestation of fire, drought, and disease-resistant species like ponderosa pine will increase resistance and resilience to potential future drought and wildfire that may be associated with a changing climate (Joyce et al., 2008).

Young Stand Thinning Followed by Prescribed Fire (EA, p. 121) – This treatment will enhance growth and vigor; reduce competition for sunlight, water, and nutrients; and modify stand conditions to lessen the risk of potential mountain pine beetle-caused mortality and stand-replacing fire on approximately 4% of the landscape.

Fire and Fuels

(EA, pp. 139-140) The Selected Action will increase ecosystem function and resilience (although not at the landscape scale), re-introduce fire to reduce surface fuel loads, and decrease the probability of crown fire initiation within treated stands.

Air Quality

(EA, p. 147) The Selected Action will reduce fuel continuity and arrangement. It will reduce wildfire smoke emissions under post-treatment conditions for both large and small particulate matter (i.e., PM10 and PM 2.5 emissions).

TES Plants

(Botany Specialist's Report, p. 2 and BE/BA p. 9) There will be no effects to known federally-listed plants because none were found during field surveys. The effects determination for *Ageratina occidentalis*, *Allium acuminatum*, *Clarkia rhomboidea*, *Cyrtopodium fasciculatum*, and *Heterocodon rariflorum* is "may affect individuals or habitat, but is not likely to result in a trend toward federal listing or loss of viability for the species".

Noxious Weeds

(EA pp. 238-239) Overall effects of the Selected Action are considered minor; noxious weed spread and establishment would continue through existing non-project vectors (e.g., roads, trails, wildlife, wind, and dispersed/unauthorized recreational activities).

Soils

(EA pp. 243-244) The Selected Action will not produce substantial and permanent impairment of the productivity of the land or cause soils to be irreversibly damaged. Unit 1 will remain within Regional Soil Quality Standards of no more than 15% areal extent of Detrimental Soil Disturbance. The underburning will have a net positive benefit to soils given the influx of nutrients, a diverse and native understory vegetation community, and low burning intensity. Loss of coarse woody material will not occur; the Lolo NF Coarse Wood Guidelines will be met.

Fisheries

(EA, p. 268) The Selected Action will protect fish and fish habitat. The effects determination is “may affect, not likely to adversely affect” bull trout, “may affect, not likely to adversely affect” bull trout critical habitat, and “may impact individuals or habitat, but will not likely result in a trend toward federal listing or result in reduced viability for the population or species” (MIIH) for westslope cutthroat trout and western pearlshell mussels.

Hydrology

(EA, p. 248) Directly, indirectly, and cumulatively, the Selected Action will result in minor short-term sediment delivery from road work, including BMP upgrades and haul, road decommissioning, culvert removals/replacements, and stream rehabilitation. However, long-term benefits (greater than 10 years) to soil productivity, vegetation growth, and stream function outweigh any short-term adverse effects.

Wildlife

(EA, pp. 229-232) The effects determinations are “May Affect, but is Not Likely to Adversely Affect” (NLAA) for Canada lynx and lynx habitat and grizzly bears. There will be “No Effect” on yellow-billed cuckoo.

The effects determinations are “May Impact Individuals or Habitat” (MIIH), but are not likely to lead to a trend toward federal listing or loss of viability for the wolverine, bighorn sheep, fisher, black-backed woodpecker, flammulated owl, and western toad.

There will be “No Impact” on gray wolf, northern bog lemming, Townsend’s big-eared bat, American peregrine falcon, bald eagle, common loon, Coeur d’Alene salamander, harlequin duck, or Northern leopard frog. Forest Plan direction will be met for Northern goshawk, pileated woodpecker, and elk.

Cultural Resources

(EA, p. 296) There will be no effect to cultural resources or historic properties.

The degree to which the action affects public health or safety

It is my determination that by incorporating the resource protection measures for air quality and recreation (DN Appendix B), and because the action will reduce crown fire potential and fire line

intensity (EA, pp. 139-140), the Selected Action will have no significant adverse effects on public health and safety.

Unique characteristics of the geographic area

Approximately 4,400 acres or 34% of the analysis area is located in the non-wilderness portion of the RNRA (EA, p. 10). The Rattlesnake Wilderness and National Recreation Area were established October 19, 1980. (PL 96-476). The Act does not approve or prohibit specific activities in the RNRA. The act identifies five values of the RNRA for municipal watershed, recreation, wildlife habitat, and ecological and educational purposes (PL 96-476 Sections 1 through 6). The Marshall Woods project maintains all five values identified in PL 96-476 (EA pp. 13-18). The effects of implementing the Selected Action on the values of the RNRA identified in the Act will not be significant.

Cultural resource investigations conducted by Lolo NF personnel and University of Montana students between 1976 to present have identified 21 different sites within the Marshall Woods project boundary. The Selected Action includes ground-disturbing activities of some kind. Prescribed underburning will have no effect on the historic cultural resources, as: 1) there are no remaining combustible features related to these sites; 2) burning is not proposed near the historic telephone poles along NFS Road #99; and 3) the cultural resource itself (ponderosa pine) is naturally fire-resistant. Two prehistoric sites within the Rattlesnake Drainage are within the RHCA buffer. Project actions will not occur near these two sites. The Selected Action will help restore a visual landscape similar to the historic character of the area (EA, pp. 295-296).

There are no significant effects on other unique characteristics of the area, as the area does not contain park lands, prime farmlands, wild and scenic rivers, or designated wilderness areas.

Based on this information, I conclude the selected action will have no effect on unique resources.

The degree to which the effects on the quality of the human environment are likely to be highly controversial

Based on the limited context of the project, review of public comments, and the analysis documented in the EA and Project File, I do not find any effects of implementing the Selected Action that are likely to be highly controversial. In the NEPA context, “highly controversial” does not encompass all public opposition to a proposed action, but instead only applies to a substantial dispute as to the size, nature, or effect of an action.¹

The effects analysis was conducted using the best available scientific literature (see EA, Literature Cited, pp. B-1 to B-39 and Project File, Section O), and the interdisciplinary team

¹ Indiana Forest Alliance, Inc. v. United States Forest Service 325 F.3d 851 (10th Cir.2003) citing Wetlands Action Network v. United States Army Corps of Engineers, 222 F. 3d 1105 (9th Cir.2000); Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir.1998) citing Greenpeace Action v. Franklin, 14 F.3d 1324, 1335 (9th Cir.1993); Sierra Club v. United States Forest Service, 843 F.2d 1190, 1193 (9th Cir.1988) (accord); LaFlamme v. Federal Energy Regulatory Commission, 852 F.2d 389, 400-01 (9th Cir.1988).

reviewed literature cited in public comments on the project (Project File, Section F; Draft DN, Appendix A).

I conclude that the effects of the Selected Action are not considered highly controversial by professionals, specialists, and scientists from associated fields of forestry, wildlife biology, soils, botany, recreation, landscape architecture, fisheries, and hydrology.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks

The Forest Service has considerable experience with the types of activities to be implemented in this project. Recently completed and ongoing examples include the Sawmill Gulch Project (also partially within the RNRA), Cut-off Project, St. Regis Fuels Reduction, Fishtrap, South Fork Fish, Auggie Mountain, and Mayo Gulch Fuels Reduction. The analysis shows the effects of this project, which includes treatments similar to those listed, are not uncertain and do not involve unique or unknown risk (see EA pp. 85-303).

Based on my review of public comments received on this project and the analysis documented in the EA and Project File, I conclude that there are no uncertain or unique characteristics in the project area which have not been previously encountered or that would constitute an unknown risk to the human environment.

The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration

The Marshall Woods Restoration Project is a site-specific action that is not likely to establish a precedent for future actions. The Selected Action includes activities that are similar in nature and effects to many other projects on the Forest and are consistent with the Lolo NF Plan. This action does not represent a decision in principle about a future consideration. Any proposed future project must be evaluated on its own merits and effects.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Connected, cumulative, and similar actions have been considered and included in the scope of analysis. The analysis accounts for past, present, and reasonably foreseeable future actions (EA, Appendix D). The cumulative impacts are not significant (analysis throughout the EA, individual Specialist's Reports, and Project File).

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources

The Selected Action will have no adverse effects on districts, sites, highways, structures, recorded archaeological sites, areas of spiritual or traditional use, or objects listed in or eligible for listing in the National Register of Historic Places, as determined by the field reconnaissance and analysis conducted in accordance with regulation and policy direction (Heritage Specialist's Report). The Confederated Salish and Kootenai Tribes and the Nez Perce Tribe were contacted about this project.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973

Determinations for the Selected Action are "May Affect, but is Not Likely to Adversely Affect" (NLAA) for Canada lynx and lynx habitat and grizzly bears. There will be No Effect on yellow-billed cuckoo (EA, pp. 229-232).

The effects determinations for the Selected Action is "may effect not likely to adversely affect" bull trout, "may affect not likely to adversely affect" bull trout critical habitat (EA, p. 268).

Whether the action threatens a violation of Federal, State, or local law or other requirements imposed for the protection of the environment

The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Conformance with applicable laws and regulations were considered in the EA. The action is consistent with the Lolo NF Land and Resource Management Plan.

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

I considered the Finding of No Significant Impact (FONSI) and EA, and determined the actions I am authorizing will not have a significant effect on the quality of the human environment, and an Environmental Impact Statement (EIS) will not be prepared.

I have reviewed this decision for compliance with laws, regulations, and policies. My decision is consistent with all laws, regulations, and policies. Findings required by major environmental laws are summarized below. Compliance with other laws, regulations, and policies are listed in the EA, Specialist's Reports, Project File, and the Forest Plan.

1. National Forest Management Act (16 U.S.C. 1600 et seq.) and consistency with the Forest Plan:

The National Forest Management Act (NFMA) and accompanying regulations require several specific findings be documented at the project level. I reviewed the Selected Action and found the following:

Consistency with the Forest Plan (16 U.S.C. 1604(i)): The Lolo Forest Land and Resource Management Plan establishes management direction for the Lolo NF. This direction is described in Forest-wide and Management Area-specific standards. Designing and implementing projects consistent with this direction is the means to move the Forest toward the desired future condition as described in Chapter II of the Forest Plan. Management Area and Forest-wide direction in the Forest Plan provides sideboards for the development of alternatives to the proposed action while responding to public issues. NFMA requires all resource plans and projects to be consistent with Forest Plan standards, guidelines, management area goals, and objectives.

After reviewing the EA, Specialist's Reports and the Project File, I find my decision is in full compliance with the Lolo NF Land and Resource Management Plan standards, guidelines, goals, and objectives, as amended.

Timber Harvest: All proposals that involve timber harvest for any purpose must comply with the four requirements found in (16 USC 1604(g)(3)(E)). I find that the prescribed timber harvest will only occur on lands where:

- *soil, slope, or other watershed conditions will not be irreversibly damaged.* The interdisciplinary team fully assessed the potential effects of timber harvest on soil and water resources and determined that there will be no measurable effect to water quality and that Regional soil quality guidelines and Forest Plan standards will be met. Their analysis is documented within the Soil, Hydrology, and Fisheries Specialists' Reports in the Project File and summarized in the EA on pages 242-244; 244-252; and 253-268, respectively.
- *there is assurance that such lands can be adequately restocked within five years after harvest.* The Selected Action will not result in regeneration needs.
- *protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat.* The Selected Action will implement resource protection measures (11 and 46-50) to protect all bodies of water from detrimental changes. Although a short-term pulse of sediment is expected from culvert replacements, sedimentation will be reduced from current conditions in the long term. The Selected Actions will comply with the Clean Water Act, Montana State Water Quality standards, and the Lolo NF Plan.
- *the harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber.* The purpose of this project is to restore functioning ecosystems by enhancing natural ecological processes; emulate fire's natural role on the landscape through vegetative treatments including using prescribed

fire; provide education opportunities to build support for restoration; and provide for diverse trail-based recreation opportunities and reduce road density in Section 31. Although some commercial sized timber will be removed to meet these goals, the selected action is an intermediate harvest and was not chosen because it provides the greatest dollar return or greatest output of timber.

Suitability of Timber Production: *No timber harvest other than salvage sales or sales to protect other multiple use values, shall occur on lands not suited for timber production (USC 1504 (k)).* Identification of lands generally suitable for timber harvest and timber production is made at the land management plan level; however, these identifications are estimates that are validated at the project level (36 CFR 219.12(a)(2)(D)(ii)). Project level suitability determinations were made during silvicultural diagnoses; final suitability determinations on lands proposed for commercial timber harvest will be documented in a site-specific silvicultural prescription prepared or reviewed by a Certified Silviculturist. Timber harvest on lands not suitable for timber production can occur when harvest is necessary or appropriate for other multiple use purposes and to achieve the desired vegetation conditions (16 U.S.C. 1604(k), 36 CFR 219.12(a)(2)(D)(ii)). This is consistent with 16 U.S.C. 1604(k) and 36 CFR 219.12(a)(2)(D)(ii) the implementing regulations of the NFMA of 1976.

Clearcutting and Even-aged Management: (16 USC 1604(g)(3)(F)) *When timber is to be harvested using an even-aged management system, a determination that the system is appropriate to meet the objectives and requirements of the Forest Plan must be made, and, where clearcutting is to be used, must be determined to be the optimum method.*

The Selected Action does not include harvest using even-aged management.

Necessity of roads: *NFMA requires that "all roads are planned and designed to re-establish vegetation cover on the disturbed areas within a reasonable period of time, not to exceed 10 years...unless the road is determined necessary as a permanent addition to the national Forest Transportation system." (16 USC 1608(a)). It also requires that road construction be designed to "standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources." (16 USC 1608(b)).*

No temporary or permanent road will be constructed under the Selected Action. A transportation analysis was conducted to determine the need for existing roads.

2. National Environmental Policy Act (NEPA):

My decision is in full compliance with NEPA. Forest Service regulations for implementing NEPA have been followed as required under 40 CFR 1500 in the development of the Marshall Woods Restoration EA and this DN and FONSI. The EA analyzes a reasonable and acceptable range of alternatives, including a "no action" alternative. It also discloses the expected impacts of each alternative and discusses the identified issues and concerns.

3. Endangered Species Act:

This project is in full compliance with the Endangered Species Act. In accordance with Section 7(c) of the Endangered Species Act, as amended, the Lolo NF prepared and submitted the Biological Assessments addressing potential impacts to federally listed wildlife and fish (Fisheries and Wildlife supporting documentation located in the Project File, Section L). Concurrence was received on January 25, 2016 (Project File, Items L-7 and 9). There are no federally listed plant species that would be affected (Botany Specialist's Report, p. 2).

4. Migratory Bird Treaty Act

The Project File shows that neotropical migratory birds are considered in accordance with the MOU with the USFWS on the Migratory Bird Treaty Act (Wildlife Specialist's Report, p. 16). The analysis of the bald eagle, black-backed woodpecker, flammulated owl, northern goshawk, and pileated woodpecker, all species protected under the Migratory Bird Treaty Act also demonstrates compliance.

5. Clean Water Act and Montana State Water Quality Standards:

Upon review of the Marshall Woods EA, Specialist's Reports and Project File, I find that activities associated with the Selected Action will comply with State of Montana water quality standards, BMPs, and associated monitoring requirements. All appropriate permits will be acquired prior to project implementation. Montana Streamside Protection Act (SPA) 124 permits will be obtained for any activity that may disturb stream channels.

6. Environmental Justice Order:

Executive Order 12898 requires fair treatment and meaningful involvement of all citizens regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. We have treated all citizens fairly and allowed meaningful involvement to every person regardless of race, color, national origin, or income. I find that this project and its NEPA analysis comply with the Environmental Justice Executive Order.

7. Clean Air Act:

Prescribed burning activities will be coordinated to meet the requirements of the State Implementation Plans, Smoke Management Plan, and Federal air quality requirements.

8. National Historic Preservation Act:

Known cultural resource sites will be protected by resource protection measures (DN Appendix B). In addition, if any new sites are located during project implementation they will be protected.

9. 2001 Roadless Rule

The Selected Action does not include any activities in inventoried roadless areas.

ADMINISTRATIVE REVIEW (OBJECTION PROCESS) AND IMPLEMENTATION

The Draft Decision Notice was made available for objection on August 10, 2015; those who commented on the EA were notified by mail or email. The objection period expired on September 24, 2015 and two objections were received. Cass Chinske, President of Friends of the Rattlesnake, was the lead objector for an objection filed by his group, Wilderness Watch, and WildWest Institute. In their objection points they alleged: 1) there was a disconnect between the purpose and need for this project, project activities, and desired outcomes; 2) the EA fails to provide the information and detail needed to understand the project, such as location of slash piles, location of drip torch initiations, slope gradients, and so on. They also state that thinning of stems should be “non-species selective,” and that the Forest should revert to an “8 inch or less diameter-at-breast-height (DBH) guideline”; 3) there is no evidence that the vegetative conditions in the project area are outside the range of natural or historic conditions, and therefore there is no need for this project; 4) residual fuel loading remains an unresolved issue in the EA, and a project timeframe of two seasons would not allow sufficient time to burn all the thinned materials; 5) the Selected Action will set a precedent for future actions in the RNRAW; 6) the Forest did not “adequately address or understand the context of the references” they provided; and 7) no linkage must be made between Unit 1 and Grant Creek or any other area to entice buyers. Dave Atkins filed the second objection. In his objection points he alleged: 1) some treatment units identified in the selected alternative do not address the potential for a running crown fire that may start outside the treatment zone, and therefore the alternative fails to achieve the project’s stated purpose and need; and 2) the project area is not large enough to achieve the project’s stated purpose, and that the Forest Service should consider a larger-scale project.

An objection resolution meeting was held on October 30, 2015. It was attended by the objectors (Dave Atkins-lead objector, Cass Chinske-lead objector, and his group: Jerome Walker, Mike Bader, and Jake Kreilick), Timothy Garcia (Lolo Forest Supervisor, Reviewing Officer), Jen Hensiek (Missoula District Ranger, Deciding Official), Raymond Smith (Region One Appeals, Objections, and Litigation Coordinator), Tami Paulsen (East Zone Interdisciplinary Team Leader), Chris Partyka (Forest Environmental Coordinator), Planning Team members, and one member of the public (Matt Arno, Montana Forest Restoration Committee Chairman). The intent of the meeting was for the Reviewing Officer to gain a better understanding of how the objection points could be resolved; resolution points were not agreed to at the meeting.

The Reviewing Officer found that the District had addressed the majority of the issues and concerns brought up by Mr. Chinske; however, direction was given to provide some further clarification in the final decision. He also provided direction to the Deciding Official to re-evaluate with the intent of determining the effectiveness of these treatments and clarify within the final Decision Notice the rationale for selecting Units 2 through 6, 70, and 71 within the Selected Action.

No further review from any other Forest Service or USDA official of the Reviewing Officer’s response to the objections is available (36 CFR 218.11 (b)(2)). Implementation can begin immediately.



CONTACT

For additional information concerning this decision, contact: Jennifer Hensiek, Missoula District Ranger, Lolo National Forest, 24 Fort Missoula Road, Missoula, MT 59804; (406) 329-3948. Information is also available at <http://www.fs.usda.gov/goto/lolo/projects>.

4/28/16

Jennifer J. Hensiek

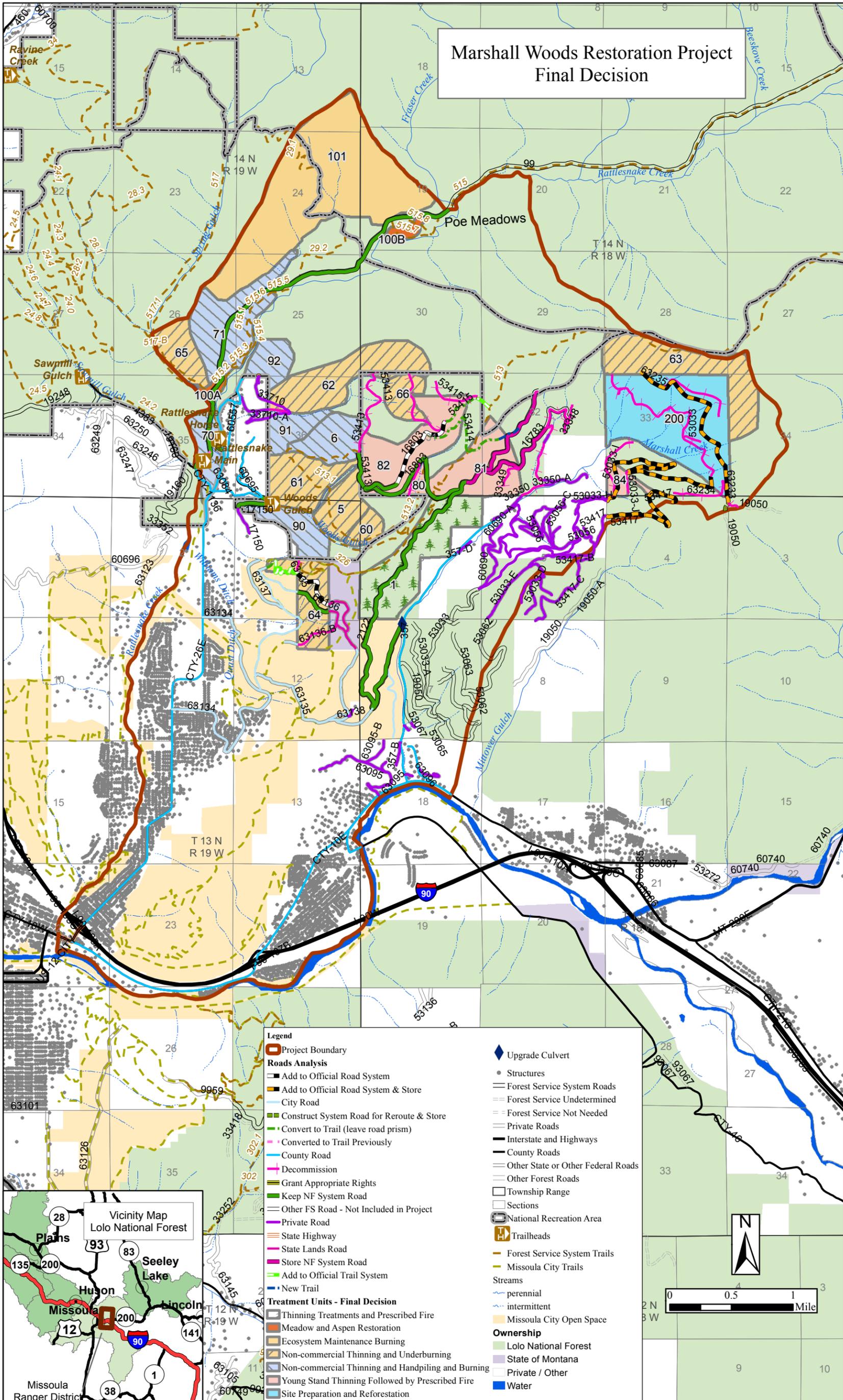
Date

Missoula District Ranger

Lolo National Forest

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Appendix A – Supplemental Response to Marshall Woods Restoration Project EA Comments

This appendix is intended to supplement (i.e., be read and considered in addition to) the original response to EA comments and literature reviewed provided in DRAFT Decision Notice Appendix A.

Comment 1

FS Supplemental Response: By selecting a blend of Alternatives C and D which eliminates commercial thinning in the RNRA, the discussion about the interpretation of whether Congress intended to “forbid commercial activities” in the RNRA is irrelevant.

Comment 2

FS Supplemental Response: Concerns over commercial thinning in Units 2, 3, 4, 5, and 6 and the conflicts that may have arisen upon implementation have been eliminated by selecting a blend of Alternatives C and D which do not include commercial thinning in the RNRA and Units 2-4 were dropped in the final decision.

Comments 3 and 7

FS Supplemental Response: The response given in the draft DN, Appendix A (p. A-13) mistakenly added the word “routine” in the response. The word “routine” has been removed from the final DN and corrected in the EA errata. To elaborate roadside brushing for safety and to enhance operational feasibility would be kept as naturally appearing as possible. Limbing will occur to a maximum of 10 feet in height in the Selected Action which is the LAC Standard (Alternative B included limbing up to 14 feet to accommodate log hauling but this alternative was not part of the Selected Action as described in the Draft DN).

While the improvements included in the Selected Action are beyond historic maintenance of Road 99/Trail 515, they are within the RNRAW indicator standards (Project File, Item N-8 p. 31 – road clearing may require extra width for drainage (ditch maintenance); smoothness of tread/removal of obstacles may differ between Classes 4 and 5). They were included in the analysis for disclosure purposes and for consideration in the cumulative effects analysis and were identified in the No Action Alternative (A). The BMP upgrades at the Spring and Frazier Creek bridges are needed to address scour/erosion at these sites (Project File, Item M7-13, p. 27); they are not designed to nor would they increase load capacity.

Comment 4

FS Supplemental Response: To further elaborate, the “authorities” that the Forest Service response cites are the implementing regulations of the National Forest Management Act (NFMA) of 1976 as follows:

36 CFR 219.11(a)(2): Identification of lands generally suitable for timber production

36 CFR 219.11(c): Timber harvest for purposes other than timber production

36 CFR 219.11: Timber requirements based on NFMA

16 USC 1604 (k): Development of land management plans (timber suitability)

To clarify the original response also cited 36 CFR 219.12(a)(2)(D)(ii) which was an error.

Comment 6

FS Supplemental Response: To further elaborate, MA28 Standard 27 is under the heading of Environmental Education. “Programs” refer to environmental education programs. There are no proposed environmental education *programs* as part of this project; therefore, there would not be any site modification or construction of facilities that would violate the natural appearance of the area as a result of environmental education *programs*. Furthermore, since the Selected Action does not include any commercial activities in the NRA.

Comment 8

FS Supplemental Response: To further elaborate, the Sawmill Gulch Fuels Project complied with applicable laws and regulations as is documented in the Decision Memo for the project (Project File, Item N-15).

Comment 11

FS Supplemental Response: Concerns over commercial thinning in the Rattlesnake NRA (Units 2, 3, 4, 5, and 6) and the conflicts that may have arisen upon implementation have been eliminated by selecting a blend of Alternatives C and D which do not include commercial thinning in the RNRA.

Comment 16

FS Supplemental Response: To elaborate, the EA complies with NEPA. It analyzes an adequate range of alternatives (i.e., four alternatives including No Action). As previously stated, the Forest Service never identified a “preferred alternative” for the Marshall Woods project. Furthermore the identification of a preferred alternative for an EA is *not* required (FSH 1909.15(16)); it is required for an EIS. Alternative B is the “Proposed Action”; we never used the term “Preferred Alternative.” The definition of a proposed action (“Proposal”) is “that stage in the development of an action when an agency subject to the Act has a goal and is actively

preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated” (40 CFR 1508.23 - Regulations for Implementing NEPA).

Comment 25

FS Supplemental Response: To elaborate, the potential effects of management actions and ecological processes do not stop at land ownership boundaries. The selection of the boundary is adequately described in the EA and rationale for selecting cumulative effects boundaries is displayed in the specialist reports in the Project File. The Lolo NF does not indicate that the project is a Healthy Forests Restoration Act (HFRA) project. The project area is identified in the Community Wildfire Protection Plan as an area within the defined Wildland-Urban Interface.

Comment 27

FS Supplemental Response: The ID Team’s analysis includes using numerous maps and spatial tools (e.g., GIS) (Project File, Item N-26). In addition, slope by unit is detailed in the Project File, Item M8-4, Soils GIS, LSI Unit Tables.

Comment 34

FS Supplemental Response: The Forest Service did not add the commercial units within the RNRA without “approval” from the LRC. The commercial units within the RNRA outside of the main corridor on the Woods Gulch side of the project area as well as the temporary roads proposed there have been a part of the Proposed Action (Alternative B) since the project was scoped in August 2010. The LRC jointly hosted and presented at the public meetings with the Lolo NF when this project was scoped, and the Proposed Action was presented to the public. Furthermore, as a result of scoping, the LRC submitted comments suggesting Alternative C which *also* includes the commercial units within the RNRA outside of the main corridor on the Woods Gulch side of the project area as well as the temporary roads proposed there (Project File, Item D-42). Alternative C was the LRC’s suggested alternative (Project File, Item D-42).

Comment 35

FS Supplemental Response: To elaborate, public involvement efforts for this project were extensive (see response given in the draft DN, Appendix A to comment 22, pp. A-20 to A-21, in particular). Following are some of the actions that were targeted to outreach to the general public between 2010 and 2015:

- Multiple news releases were sent to the Missoulian (i.e., January 25 and February 16, 2010 (Project File, Items B-4 and 11); July 30, 2010 (Project File, Item B-31); April 2, 2015 (Project File, Item E-25); April 8, 2015 (Project File, Item E-28); and August 9, 2015 (Project File, Item H-1)).

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- Numerous articles appeared in the Missoulian as well as other news outlets (e.g., February 2, 2010 (Project File, Item B-3); September 12, 2010 (Project File, Item C-9); and March 15 and 19, 2015 (Project File, Items E-14 and 22)).
- Informational materials were posted at the Rattlesnake Trailhead and at proposed Units 2 and 3 and 4-6 in September 2010 (Project File, Items C-6 to C-8) and again at the Rattlesnake Main Trailhead, Rattlesnake Horse Trailhead, Sawmill Gulch Trailhead and Woods Gulch Trailhead on March 17, 2015 (Project File, Items E-15 and 17). The estimated traffic count along the main corridor in September 2010 was approximately 6,536 counts suggesting this information could have been widely viewed (Project File, Item M6-1, p. 16).

All of these activities occurred in addition to numerous targeted mailings including one in 2010 to 1,724 residences (664 homes in the Fox Farm, Lincoln Hills, and Rattlesnake Drive areas; 410 residences in the Upper Rattlesnake; and, 650 homes mostly located up Duncan Drive) (Project File, Items B-12 and 13). Additionally a communication plan was developed for the project by the District Ranger prior to roll out of the EA which outlines those efforts (Project File, Item E-42).

Comment 36

FS Supplemental Response: The project includes four defined alternatives. The public comments received following the 2010 scoping of Alternative B, the Proposed Action, were used to develop a range of alternatives which included Alternatives C and D. A content analysis of the comments and the disposition or summary of the analysis of those comments is located in EA, Appendix C (Project File, Item A-1, pp. C-1 to C-35).

Comment 42

FS Supplemental Response: In addition, one of the four objectives on the project was to provide for diverse trail-based recreation opportunities and reduce road density in section 31, which is surrounded on 4 sides by the RNRA and is consequently managed similar to the RNRA.

Comment 44

FS Supplemental Response: In addition, the Recreation Specialist's Report, which was posted on the Lolo NF NEPA Projects webpage, included an extensive discussion about National Recreation Areas as well as the specific management direction for the RNRA (Project File, Item M6-1, pp. 2 to 15 and 53 to 59).

Comment 59

FS Supplemental Response: As stated in EA, the document is meant to include concise summaries and additional information can be found on-line and in the Project File (Project File, Item A-1, Summary).

Comment 62

FS Supplemental Response: Subsequent comment regarding the timing and sequence of implementing Alternative B's commercial thinning and follow-up treatments are irrelevant given Alternative B was not selected. Thinning in Unit 1 is the only applicable unit to this issue since thinning of Units 2-6 is not included in the Selected Action. Refer to EA Appendix F to gain an understanding of potential treatment sequencing. The implementation timing is also discussed in the Frequently Asked Questions document which was posted on the dedicated Marshall Woods webpage (Project File, Item E-11).

Comment 86

FS Supplemental Response: As discussed on Fire and Fuels Specialist's Report p. 5 (Project File, Item M2-6), "The Marshall Woods Restoration Project is within the area assessed in the Missoula County Community Wildfire Protection Plan (CWPP). Missoula County CWPP (2005) is a county-level document emphasizing collaborative effort to reduce hazardous fuels. The county-level CWPP efforts 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 treatment recommendations".

"In the fire-management community, the term Wildland-Urban Interface (WUI) refers to the area where human development meets natural vegetation and the chance for catastrophic wildfire increases. This could literally mean most of Missoula County. So for our CWPP, we need a more precise (community-supported) definition.

National guidelines recommend for landscapes such as ours (meaning with our makeup of fuels and topography) that we define the WUI as being 1.5 miles from structures. However, Missoula County doesn't have a database of *exact* structure locations and is likely to never have such, given the expense of data acquisition and the expanding nature of the WUI. Instead, this fire plan relies of population density data, as provided by the U.S. Census Bureau. Project leaders understand that this data is useful for predicting development patterns within the County and, as such, it could be referenced to influence development in the future.

Knowing that this fire plan is a living document, regularly and easily updated, project leaders have elected to accept the national default, and thus define the County WUI as being a 1.5 mile zone around areas of population density" (Project File, Item O-645, p. 12).

It is important to clarify that the Lolo NF did not solely define Missoula County's WUI. Development of Missoula County's CWPP included a diverse group of members from the community including the Montana Department of Natural Resources and Conservation, Forest Service, Confederated Salish and Kootenai Tribes, Bitterroot Resource Conservation and Development, Local Fire Districts, Bureau of Land Management, as well as the National Forest Protective Alliance (Project File, Item O-643).

Comment 87

FS Supplemental Response: Vegetative conditions and fuel loads were discussed in the EA and Forested Vegetation Specialist's Report (Project File, Item M5-1). Refer to draft DN, Appendix A response to comments 53, 55, 61 and 88. To elaborate, in the RNRA "The current policy is to suppress wildfires as soon as possible after discovery. The relative small size of the RNRAW; the land, resource, and residential values of adjacent lands; and the protection afforded a municipal watershed dictate that the Forest Service continue the immediate suppression policy for the RNRAW (Project File, Item N-8, p 15 I – H).

Comment 89

FS Supplemental Response: Refer to draft DN Appendix A response to comments 62 and 89 as well as the response to the following FS Supplemental Responses regarding "removal of canopy cover".

"The treatments of the Selected Action will reduce ladder fuels, raise crown base heights, reduce surface fuel loadings, and create a mosaic of size and age classes within the treatment areas. By reducing hazardous fuels, ladder fuels, and surface fuel loadings in multistoried mixed conifer stands, these treatments will aid in reducing wildfire hazards by rendering stands more resilient to natural fire occurrence and disturbances. The treatments will also increase the effectiveness and safety of initial attack resources. Removing these surface and ladder fuels will decrease the chance of crown fire initiation. As a result, fire intensity at the fireline will be lowered creating a fire behavior that is more manageable by initial attack ground resources. This will be particularly important within proximity of private ownership" (final Decision Notice p. 6).

Comment 90

FS Supplemental Response: As pointed out in the draft DN, Appendix A response to comment 88, the Project File contains all fuel loading and flame height estimates over the temporal period of the analysis (Project File, Items M5-18, M5-21, M5-22, M5-24, M5-28, M5-29, M5-30, M5-31, M5-32, M5-33, M5-34, M5-35, M5-36, M5-37, M5-38, M5-39, M5-40, M5-41, M5-42, M5-43, M5-44, and M5-45). Our success utilizing direct attack is generally higher with flame lengths less than four feet in height allowing firefighters a greater margin for safety since there are limited unburned fuels between them and the fire (EA, p. 129).

Comment 91

FS Supplemental Response: The term “fuel break” is not discussed anywhere in the EA, and it is not an objective as stated in the purpose and need of the project.

“The purpose and need of the Marshall Woods project includes restoring functioning ecosystems by enhancing natural ecological processes. Because the ecosystems within the project area are fire-dependent ecosystems, emulating fire’s natural role on the landscape through vegetative treatments including prescribed fire not only restores functioning ecosystems but simultaneously reduces the potential severity of wildfire impacts to both the private lands and the surrounding area that make up the WUI” (final Decision Notice, p. 8).

Comment 92

FS Supplemental Response: Advocating that thinning or any other fuel reduction treatment is a poor strategy for reducing wildfire severity is contrary to best available science. Furthermore, Reinhardt, et al. aims to “reduce differences in expectations” and “clarify common misconceptions regarding fuel treatments”, they advocate that “while the potential of fuel treatment to reduce wildfire occurrence or enhance suppression capability is uncertain, it has an important role in mitigating negative wildfire effects, increasing ecosystem resilience and making wildfire more acceptable” (Reinhardt, et al., 2004). In addition to our supplemental response to comment 91 above, please refer below to the Marshall Woods project purpose and need regarding fire where “fire suppression” is not mentioned.

Emulate fire’s natural role on the landscape through vegetative treatments including prescribed fire.

- Promote ecosystem health with prescribed fire to distribute beneficial fire effects to areas within the wildland urban interface (WUI).
- Integrate project objectives with the Missoula County Wildfire Protection Plan (CWPP).
- Decrease high intensity wildfire potential; enhance firefighter efficiency and safety within the WUI (final Decision Notice, p. 6).

Comment 93

FS Supplemental Response: No 8” diameter limit standard exists. Refer to the response to comment 93 (draft DN, Appendix A, p. A-53). To clarify only trees 8” dbh or less will be cut on 90% of the area (3,552 acres) included in the Selected Action. Units 6 and 90-92 as included in all action alternatives and the decision includes cutting trees up to 10” dbh. Units 6 and 90-92 are going to be treated by non-commercial thinning followed by hand piling and burning. As discussed on EA pp. 117-118, “This treatment is designed to reduce hazardous fuels in mid-aged mixed conifer stands immediately adjacent to private land with limited road access. The treatment is designed to reduce crown fire initiation and improve public and firefighter safety.

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The treatment would only thin small diameter (trees less than 10" dbh). Treatments would consist of slashing or thinning small diameter trees, and piling and burning material. Understory density and ladder fuels would be reduced through slashing, piling and burning. This would reduce the likelihood of a surface fire crowning over the no action alternative. Density reductions would result in a moderate increase in vigor by freeing up growing space."

In these units, cutting and handpiling trees up to 10 inches diameter will provide moderate treatment efficacy and improvement over the current condition as disclosed in the EA. These sites are predominately north aspects and a key at-risk species, western larch, is present. These are the sites in the draft decision that will promote larch. In 2008, the Lolo Restoration Committee indicated their interest was in larch restoration. Western larch are highly shade-intolerant, some thinning of the main canopy and removing trees 8-10 inches dbh is essential to maintaining this species on these sites and on the landscape.

Units 100A and 100B are Meadow and Aspen Restoration treatments. EA p. 119 describes, "This treatment is proposed along the main Rattlesnake Trail and in the Poe Meadows area. Tree encroachment is converting these homestead meadows into forested areas and resulting in the decline of small aspen groves. To maintain meadows and aspen, the proposal would reduce or remove conifer encroachment. Trees would be cut and left on site. The slash would be treated by lopping and scattering, hand piling and burning, and/or chipping. Where aspen are present, parent trees would be retained and surrounding conifers would be felled to provide sufficient light to stimulate aspen regeneration. Felled trees would be jack-strawed around aspen clumps to reduce browsing pressure on regenerating sprouts. Light jackpot burning and construction and maintenance of small exclosures may also occur to stimulate suckering and protect young aspen trees from big game browsing." This treatment is also the same in all action alternatives; and there are no diameter thresholds. The objective is to remove competing conifers to stimulate aspen regeneration. "This would occur by either removing conifer encroachment and/or prescribed burning. These actions would stimulate suckering among aspen clones increasing the aspen distribution within the treatment areas. Browse protection may also occur. The treatment would perpetuate this key at-risk species through regeneration and protection. Tree encroachment would be removed to maintain the historic meadows providing cover type and structural diversity, important elements of a resilient landscape." Therefore we did not impose diameter limits in any of the action alternatives as they would preclude the objectives of this meadow restoration treatment.

Comment 94

FS Supplemental Response: Additionally, the Project File references are included throughout the Forested Vegetation Specialist's Report.

Comment 95

FS Supplemental Response: Additionally, the data and analysis methods are cited and referenced throughout the Forested Vegetation Specialist's Report and in draft DN, Appendix A, response to comments 58, 59, 63, 77, 85, 94 and 97.

Comment 115

FS Supplemental Response: See response to comment 115 in the draft DN Appendix A (p. A-61), which addresses the two key issues brought up in the comment:

1. The Lolo Forest Plan (1986) does not include standards related to hiding cover, and thus a specific analysis of hiding cover was not required, nor was an extensive analysis of hiding cover deemed necessary by the biologist to determine the effects of the project on elk in this particular area; and
2. The Wildlife Specialist's Report includes a full analysis of effects to elk, a Forest Plan Management Indicator Species, focusing on the issues deemed most relevant to this particular elk herd, meeting the requirements of NEPA.

Comment 126

FS Supplemental Response: The decision does not include a commercial timber operation along Rattlesnake Creek in fact the draft and final decision included only hand treatment and prescribed burning in the RNRA. In addition, from the response to comment 133, "As noted in the Fisheries and Hydrology Specialists' Reports (Project File, Items M3-6, pp. 9-10, and M7-13, pp. 11-14, respectively), assessment and effects analysis was based on a variety of existing site-specific information including but not limited to PIBO data sites within the Rattlesnake watershed, GIS data, baseline assessment information, fisheries sampling and redd counts, recreation monitoring, personal communications with local fisheries biologists, and multiple site visits to the project area by hydrology and fisheries personnel. The Fisheries Specialist's Report (pp. 17-18) also uses information from the Bull Trout Conservation Strategy (USDA-FS and USDI-FWS 2013) which provides data on bull trout population and habitat status at the Middle Clark Fork Core Area scale. All of this information, as well as the EA document itself provides the necessary site-specific data to qualify as a watershed analysis for the project." On page A-5 of the Inland Native Fish Strategy (Project File, Item O-391) it specifies that "Interim RHCA widths may be modified by amendment in the absence of watershed analysis where stream reach or site-specific data support the change". Similar methods were used in the adjustment of the RHCA buffer in the Colt Summit project (Seeley Lake Ranger District, Lolo NF) which was subsequently litigated specifically on the RHCA adjustments. The Court Decision (Project File, Item N-27, pp. 13-16) found the "Services explanation in the Aquatics Report satisfies this requirement."

Comment 129

FS Supplemental Response: The decision does not include a commercial timber operation along Rattlesnake Creek. Also of note, the DN (Appendix B) and Fisheries Specialist's Report (Project File, Item M3-1) provide multiple Resource Protection Measures beyond BMPs.

In addition, fish sampling data is located in the Project File (Item M3-2). The published scientific literature used by the fisheries biologist is also located in the Project File (Items O-355 to O-409).

Comment 130

FS Supplemental Response: The decision does not include a commercial timber operation along Rattlesnake Creek. Also see FS Supplemental Response to comment 129 above.

Comment 131

FS Supplemental Response: The Selected Action does not include haul of thinned trees within the RNRA and retains only one commercial unit (Unit 1) which is located outside the RNRA on the Marshall Creek side of the project area. Marshall Creek is not known to support Bull Trout.

Comment 132

FS Supplemental Response: Of note, the Fisheries Specialist's Report cites literature that describes the importance to angular canopy density adjacent to streams (Project File, Item O-356). From the Fisheries Specialist's Report (p. 25), "No effects are anticipated to stream temperature due to the retention of a 50-foot no activity buffer and INFISH RHCA buffers that restrict commercial harvest and retain large trees for overhead canopy cover. The effectiveness of buffers on a variety of riparian functions including shading correlates well with the width of the buffer and retention of shade-providing vegetation (Beschta et al. 1987, FEMAT1993, Moore et al. 2005, DeWalle 2010, Groom et al. 2011). Buffer width effectiveness is high when equal to or greater than one site-potential tree height (which is approximately 100 feet on the Lolo NF), and canopy density and height of large, shade-providing trees is retained within the buffer (DeWalle 2010). The prescribed Resource Protection Measures for this project would exceed these buffer recommendations" (Project File, Item M3-1, p. 25).

Comment 133

FS Supplemental Response: The decision does not include a commercial timber operation along Rattlesnake Creek. To clarify, INFISH RHCA buffers were to be applied to all commercial thinning units, with the exception of Unit 2 in Alternative B because along its southern boundary Rattlesnake Creek is protected by a high terrace above the creek which provides an adequate buffer distance to minimize or eliminate effects on shading/temperature, sediment and large woody debris (Project File, Item M3-1, p. 15). For Unit 2 in Alternative B

that particular area was to have a 75-foot buffer from the edge of the high terrace to retain potential large woody debris (EA pp. 68-69). The other exception to INFISH RHCA buffers is to allow non-commercial thinning treatments beyond 50 feet from scoured channels (EA p. 69). Because this is a common practice, this variation was not viewed by the Fisheries Biologist as a “specific change to default RMOs or RHCAs.” From the response to comment 133, “A watershed analysis is only needed as required by INFISH (USDA-FS 1995) in order to provide a basis and documentation for any specific changes to default RMOs or RHCAs, which we are not proposing for this project. In addition, the Fisheries and Hydrology Specialists’ Reports and justification for the Resource Protection Measures are based on site-specific data collected and compiled for the Rattlesnake watershed. As noted in the Fisheries and Hydrology Specialists’ Reports (pp. 9-10, and pp. 11-14, respectively), assessment and effects analysis was based on a variety of existing site-specific information including but not limited to PIBO data sites within the Rattlesnake watershed, GIS data, baseline assessment information, fisheries sampling and redd counts, recreation monitoring, personal communications with local fisheries biologists, and multiple site visits to the project area by hydrology and fisheries personnel. The Fisheries Specialist’s Report (pp. 17-18) also uses information from the Bull Trout Conservation Strategy (USDA-FS and USDI-FWS 2013) which provides data on bull trout population and habitat status at the Middle Clark Fork Core Area scale. All of this information, as well as the EA document itself provides the necessary site-specific data to qualify as a watershed analysis for the project.”

Comment 135

FS Supplemental Response: The decision does not include a commercial thinning operation along Rattlesnake Creek. Refer to draft DN Appendix A response to comments 126 (p. A-67) through 136 (p. A-73). The responses include the citations back to the EA, Fisheries Specialist’s Report, and Project File that demonstrate where these issues have been fully disclosed.

Also refer to the draft DN Appendix A response to comment 135. “Effects analysis specific to temperature for each of the action alternatives (B, C, and D) is found in the Fisheries Specialist’s Report (p. 25, EA pp. 259-260), with rationale and supporting scientific literature.”

Comment 169

FS Supplemental Response: In addition, pp. 54 to 56 in the Recreation Specialist’s Report summarizes how the project’s activities comply with LAC standards (Project File, Item M6-1).

Comment 170

FS Supplemental Response: To elaborate, the response states, “While the effects vary by alternative, in summary the treatments would *reduce the risk of disease, insect infestation, and high severity wildfire while increasing vegetation diversity, which would increase sustainability and have some beneficial long-term impacts to the visual quality of the landscape.*” (Draft DN, p. A-85). The text in italics addresses the subsequent comment.

Comment 173

FS Supplemental Response: To elaborate, the EA acknowledges there is a possibility of users creating new trails along corridors but Resource Protection Measures were designed to minimize the impacts. The EA and Recreation Specialist’s Report acknowledges there would be short-term impacts to recreation in general and the potential of non-system recreation routes/trails being created (EA pp. 275 – 290 and Project File, Item M6-1 pp. 23 – 39). Resource Protection Measures were developed to reduce the potential of non-system routes/trails from developing by leaving a 100-foot buffer around trails (RPM #s 61 and 63, EA p. 76) and around dispersed campsites (RMP #62, EA p. 76). Impacts from improvements on Road 99/Trail 515 are discussed on EA pp. 288 – 289.

Comment 174

FS Supplemental Response: Refer to response given in the draft DN, Appendix A (p. A-86); the definitions of the impacts to recreation are defined on EA pp. 274 – 275 which describe the “scene” and what the recreationist could experience. These were used consistently to determine the impacts of the project on the recreating public.

Comment 190

FS Supplemental Response: Refer to response given in the draft DN, Appendix A (p. A- 94). Table 52 on EA p. 299 presents a *summary* (not a *summation*) of the project feasibility and financial efficiency of the alternatives. These numbers do not, and are not intended, to *add up*.

Comment 210

FS Supplemental Response: To elaborate, it appears the comment is referring to Rattlesnake Drive, “*The EA contains scant information related to projected effects of logging truck traffic traveling several miles up and down a narrow road through a residential neighborhood with road side schools. It simply says that traffic will be staggered to avoid school bus drop-off and pick-up times. When or how it does not say... the Proposed Action would require over 100 log trucks fully loaded with logs up to 35-40’ in length, representing heavy and long loads. Nor are the effects of noise and dust generated by this traffic estimated or revealed.*” The decision doesn’t include any commercial thinning in the Rattlesnake. The truck traffic will be on Marshall Canyon Road. More information about these impacts is described in the EA on pp. 284-285, and is discussed in the FAQs (Project File, Item E-11).

Review of Literature Submitted in Comments

Alexander, Martin E. and Bret W. Butler. 2008. Proceedings of the Wildland Fire Safety Summits. Fire Management Today 68(1):40.

FS Supplemental Response: The link between this literature and the Marshall Woods project was unclear because no attempt to identify relevance between the supplied literature and the Marshall Woods Project was made by the commenter. Furthermore, the foreword of the Proceedings of a Wildland Fire Safety Conference in 2005, edited by Alexander and Butler is “Why human factors ten years later?”, describing the 10-year anniversary of the 1995 Human Factors Workshop. The literature provided was a 2-page advertisement to purchase a CD containing the proceedings for the 2005 Eighth Wildland Fire Safety Summit. The proceedings themselves contain 28 conference proceedings and 19 poster papers with no indication of where “links” to the Marshall Woods project could be found.

Merely supplying literature without identifying the direct relationship to the project does not meet the definition of “specific written comments” (36 CFR 218.2). It is the commenter’s responsibility to make the link that demonstrates the context in which the literature they provided was intended.

Literature submitted on bull trout

FS Supplemental Response: Subsequent comments rebut the Forest Service review of the literature the commenter cited on bull trout. Refer to draft DN Appendix A response to comments 126 (p. A-67) through 136 (p. A-73). The responses include the citations back to the EA, Fisheries Specialist’s Report, and Project File that demonstrate where these issues have been fully disclosed. The Forest Service responded to the literature cited in the comments (draft DN, Appendix A, pp. A-217 to A-225). The requirement to address literature provided with no explanation of its relevance is discussed in the response above.

Bader, M. 2000. Wilderness-based ecosystem protection in the Northern Rocky Mountains of the United States. Pages 99-110 in: McCool, S.F, D.N. Cole, W.T. Borrie and J. O’Loughlin, comps. Wilderness science in a time of change conference Proceedings RMRS-P-15-VOL-2. U.S. Department of Agriculture, Rocky Mountain Research Station. Ogden, UT

Bader, M. 2004. A report prepared by Mike Bader Consulting in Missoula, Montana under contract with the Alliance for the Wild Rockies for use by Alliance for the Wild Rockies and Friends of the Wild Swan, regarding public comment to the US Fish and Wildlife Service’s announcement to conduct a five-year status review of bull trout.

FS Supplemental Response: Subsequent comments rebut the Forest Service review of the literature the commenter cited. Refer to draft DN Appendix A response to comments 126 (p. A-67) through 136 (p. A-73). The responses include the citations back to the EA, Fisheries Specialist’s Report, and Project File that demonstrate where these issues have been fully disclosed. The Forest did not state that Bader 2000 was an “opinion”. Bader (2004) was included on the CD with no explanation as to its relevance, and it was not cited in comments.

Fox, J.W. and Ingalsbee, T. 1998. Fuel reduction for firefighter safety. Proceedings of the International Wildland Fire Safety Summit, Winthrop, WA

FS Supplemental Response: Following is a response to this statement in the Fox and Ingalsbee paper, "...within the U.S. Forest Service, there has been more of an interest in mechanical fuels reduction treatments using commercial thinning for fuelbreak construction to lower the risk of crownfires. We question the assumption that canopy fuel reduction through commercial thinning is necessary or sufficient for reducing wildfire hazards and/or introducing prescribed fire" (Fox, Ingalsbee, 1998).

As stated in the EA, "A common objective of thinning for fuel management is to reduce the chance of crown fire by reducing canopy fuels, especially in forest types that historically burned in low severity fires. However, thinning alone does not typically constitute an effective fuel treatment, but instead must be combined with treatment of surface fuels. In the absence of fire, many stands that historically burned frequently and had open structures have become dense with vertically continuous canopies. This makes them more prone to crown fire and is one of the prime causes of the wildland fuel problem. Thinning stands to reduce crown fire potential is a primary means of reducing fire hazard (Graham et al., 1999, 2004; Brown and Aplet, 2000). Agee and Skinner (2005) summarize guidelines for treating wildland fuels with thinning. They offer four principles for creating fire-resilient stands in dry forests: reduce surface fuels, increase the height to the canopy, decrease crown density, and retain big trees of fire-resistant species (Reinhardt, et al., 2008). Thinning for fire hazard reduction should concentrate in general on the smaller understory trees to reduce vertical continuity between surface fuels and the forest canopy. In some cases it may be desirable to reduce the horizontal continuity of the canopy as well by thinning some bigger trees (Reinhardt, et al., 2008). All action alternatives' proposed treatments include prescribed fire applications to reduce surface fuels" (EA, p. 140).

Ingalsbee, T. 2005. Fuelbreaks for wildland fire management: A moat or a drawbridge for ecosystem fire restoration? Fire Ecology 1(1):85-99. Association for Fire Ecology.

FS Supplemental Response: The following is in response to comments that this project was designed for fire suppression. Although treatments will result in a more manageable wildland fire environment for fire suppression resources, fire suppression is not an objective of the project and therefore "fuelbreaks" are not involved. While the EA discusses improving "firefighter safety and efficiency", that is a by-product of achieving the objectives as stated in the purpose and need. The EA clearly defines the multiple objectives tied to this project and highlights the fact that through restoration we can achieve an improved wildland fire environment.

"The purpose and need of the Marshall Woods project includes restoring functioning ecosystems by enhancing natural ecological processes. Because the ecosystems within the project area are fire-dependent, emulating fire's natural role on the landscape through vegetative treatments including prescribed fire not only restores functioning ecosystems but simultaneously reduces

the potential severity of wildfire impacts to both the private lands and the surrounding area that make up the WUI. This is important especially in this area as it serves as a backup municipal watershed for the City of Missoula and is a highly visited National Recreation Area. See also the Draft Decision Notice where it is stated that “The actions I am authorizing with this decision will be effective in parts of the project area at reducing the potential initiation of crown fires which can lead to devastating fire effects and threaten homes within the WUI” (draft Decision Notice, pp. 7-8).

Kreilick, Jake. 4/27/2015. Statement Regarding History of Marshall Woods Project

FS Supplemental Response: The CD the commenter provided with Jake Kreilick’s letter included two files with page 1 of Kreilick’s letter; we did not receive page 2 although one file’s name was “p1” and the other was “p2”. Having said that, the March 18, 2015 public meeting was not the first time commercial thinning or road building in the RNRA was proposed or discussed. Refer to response to comment 34 (draft DN Appendix A, pp. A-24 to A-25) as well as the FS Supplemental Response to comment 34 above.

Lolo National Forest. 2004. Press Release on Sawmill Gulch Fuels Reduction Project

FS Supplemental Response: As stated in the draft DN Appendix A (p. A-220), the Forest Service is familiar with this document as we were a co-author. The Sawmill Gulch project was a small demonstration project done in 2004 in partnership with the Society of American Foresters and the Sierra Club. The news release states that the Sierra Club supports ending commercial logging on public lands but their “restoration booklet” includes an exception of “within 1/3 mile from a community/homesite edge” (Project File, Item N-14).

Odion, D.C, Hanson, C.T., Arsenault, A., Baker, W.L., DellaSala, D.A., Hutto, R.L., Klenner, W., Moritz, M.A., Sherriff, R.L., Veblen, T.T. and Williams, M.A. 2014. Examining historical and current mixed-severity fire regimes in Ponderosa pine and mixed-conifer forests of western North America. PLoS ONE 9(2)

FS Supplemental Response: The article Odion, et al. (2014) was reviewed and the applicability to this project assessed. Again, as disclosed in Forested Vegetation Specialist’s Report, variable severity fire regimes likely dominated moderately warm and dry forests with both low and high severity fire events. Also see draft DN, Appendix A, response to comments 53 and 55.

Oliver, M. 2014. Reality check: shedding new light on the restoration needs of mixed-conifer forests. Science Findings (168), Pacific Northwest Research Station, USDA Forest Service

FS Supplemental Response: We agree with Oliver’s (2014) assertion that not all mixed-conifer forests should be managed the same when resilience is the goal, and “what might be done in one place might not be appropriate in another”. Alternative B, and to a lesser extent, Alternative C

provided variability in treatments types based on site-specific forest types and existing conditions. Alternative D and the draft decision do invoke more of a one-size-fits-all approach.

Rheinhardt, E.D., Keane, R.E., Calkin, D.E. and Cohen, J.D. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. *Forest Ecology and Management* 256:1997-2006

FS Supplemental Response: Subsequent comment referred to a citation from Reinhardt, et al. (2008) which states, “Treating fuels to facilitate suppression is an example of circular logic. If fuel treatment makes suppression more successful in general, then less area will be burned in the short run and more acreage will tend to burn under extreme conditions, when suppression is ineffective. The inevitable result is that more area is burned in fewer, more unmanageable events with greater consequences.” They suggest a more successful approach is to focus on the area directly adjacent to structures and reduce the flammability of the structures themselves. This comment cites one section of the greater Reinhardt et al., 2008 paper titled, “Fuel treatments in wildlands should focus on creating conditions in which fire can occur without devastating consequences, rather than on creating conditions conducive to fire suppression.”

We assume this comment suggests that this project was designed for fire suppression. Although treatments will result in a more manageable wildland fire environment for fire suppression resources, fire suppression is not an objective of the project. Please refer to the Purpose and Need regarding fire on page 6 of the final DN and comment number 91 in this supplement. Additionally, one of our citations from Reinhardt et al., (2008) on page 24 of the Fire and Fuels Specialist Report (Project File, Item M2-6) states, “It is possible to craft treatments that achieve both ecological restoration and fire hazard reduction, but ecological restoration will also include reintroducing fire and other active management. For instance, thinning out small, dense trees from under a canopy of large ponderosa pine is often the first step in both ecological restoration and fire hazard reduction (Allen et al., 2002). Fuel treatments that do not include fire may not fully achieve restoration goals in fire-prone ecosystems (Reinhardt et al., 2008)”.

This concept was also addressed extensively in draft DN Appendix A - Response to Dick Artley’s Attachment #11 (Dr. Cohen) (pp. A-204 to A-217).

Appendix B - Resource Protection Measures for the Selected Action

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
Soils	Standard Soil Practices <i>To maintain soil productivity, forest floor integrity, and reduce detrimental soil disturbance during project implementation</i>	R1 Soil and Water Conservation Practices, Standard Soil Operating Procedures, Best Management Practices (BMPs) for Forestry and Streamside Management, and Timber Sale Contract language, would be implemented (Soil File 6). Soil Specialist Report Appendix B contains definitions and guidelines for summer ground-based commercial harvest.	All Activity Units	1	C	S	
“	Large Woody Material in YST units <i>To ensure adequate woody material is left on the ground for nutrient cycling</i>	Due to low levels of organic matter, all material cut would be left on site to slowly release nutrients to the soil, improve water retention, and provide future soil organic matter. Prescribed fire or slash piling would not be applied to these units unless the unit is reviewed by the Forest Soil Scientist or fire is prescribed greater than 5 years after the thinning treatment.	Young Stand Thinning Units 80, 81, 82, and 84	2	C	P	
“	LWM in Unit 200 <i>To ensure adequate woody</i>	Due to low levels of organic matter and forest floor development, the site preparation and reforestation prescription would leave large woody	Unit 200	3	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<i>material is left on the ground for nutrient cycling, site amelioration, and forest floor development</i>	material in the 13-18 tons/acre range where available. Large woody material would consist of both down and standing wood.					
“	<p>Commercial Thinning Activities – Harvest Operations</p> <p><i>To maintain soil productivity and reduce detrimental disturbance and weed impacts</i></p>	<p>Summer Operating Conditions</p> <p>Where they exist and are safe, existing skid trails would be used unless approved by the TSA.</p> <p>Operation of skidding equipment off of designated trails would be minimized unless dispersed skidding is approved during winter periods.</p> <p>Harvesting and skidding operations would not occur unless specified conditions (i.e., dry soil) exist over approximately 85% of the harvest unit (including landings). Soil moisture would be evaluated at the bottom of the root-tight layer if one exists or within the top 6-12 inches of the soil surface (Refer to Table B1 in the Soil Specialist’s Report for a definition of dry soil by soil texture).</p> <p>Equipment would be allowed to</p>	Ground-based portions of Unit 1	6	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		<p>operate on slopes averaging 35% or less, and would also be allowed to operate on slopes of 35-40% (less than 100 feet in length) as approved by the TSA in coordination with the Soil Scientist.</p> <p>Existing landings would be re-used to the extent possible.</p>					
"	<p>Skid Trail - Location, Construction, Use, Rehabilitation</p> <p><i>To maintain recreation and cultural resources, visual quality, and soil productivity as well as reduce detrimental soil disturbance and improve the recovery of native vegetation</i></p>	<p>During Dry Season Operations. Where they exist and are safe, existing skid trails would be used unless approved by the TSA.</p> <p>Operation of skidding equipment off of designated trails would be minimized unless dispersed skidding is approved by the TSA during winter periods.</p> <p>Any skid trail crossings will be perpendicular to system trails. The skid trail will curve as soon as feasible to minimize the distant view. Slash and debris will be placed within the skid trail for at least the "line-of-sight" to discourage use by recreationists</p>	Within 100 feet of system trails in ground-based portions of Unis 1	7	C C S	S P P	
"	<p>Log Landings - Location, Construction,</p>	Where practicable, landings would be constructed, piled, and burned in areas where detrimental soil	Within 100 feet of system trails in ground-based	8	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<p>Pile Burning, Rehabilitation</p> <p><i>To maintain recreation and cultural resources, visual quality, and soil productivity as well as reduce detrimental soil disturbance and improve the recovery of native vegetation</i></p>	<p>disturbance already exists (i.e., previous log landings, skid trails, and roads associated with past activity). If possible locate landing piles outside of sensitive viewsheds.</p> <p>When activities occur along open trails, whenever possible slash will be treated within 100 feet of the corridor within 6 months and no longer than 1 year.</p> <p>If “curtain” (incinerator) burning is used, locate burning pit in an interior location in the stand where it is not visible from trails or creeks. Do not develop access routes that follow a straight line of sight, curve the route to limit distant view. Use of the access route would occur over a slash mat.</p> <p>Where landing piles will be burned on-site the following rehabilitation is required.</p> <ul style="list-style-type: none"> • Treat the landing for weeds, • After the piles are burned, rehabilitate the landing by site scarification (hand or machine 6-12 inches deep, subsoiling may be prescribed by the 	portions of Unit 1		<p>O</p> <p>O</p> <p>S/C</p>	<p>P</p> <p>P</p> <p>S/P</p>	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		<p>Forest Soil Scientist),</p> <ul style="list-style-type: none"> • Seed the landings in the fall, or as practicable, with native seed composed of species similar to the surrounding area (check with botanist or native plant coordinator), • Place slash over the site to a depth of 2-3 inches covering 65-70 percent of the landing. Ensure the slash is in contact with the soil surface, and • Plant the landing with tree seedlings. • Monitor the landing for the first 5 years to ensure re-vegetation is successful and self-sustaining. 					
"	<p>Hand-Piled Slash - Location, Construction, Use, Rehabilitation</p> <p><i>To maintain recreation and cultural resources, visual quality, and soil productivity as well as reduce</i></p>	<p>In areas beyond 50 or 100 feet of system trails and dispersed campsites. Prior to hand piling, slash would be left through one winter after cutting to allow for initial decomposition and nutrient leaching OR, in lieu of this, material less than 1" diameter at breast height would be lopped and scattered and not piled and burned.</p> <p>Exception: units adjacent to private</p>	<p>50 feet for Units 61, 64, and 90-92</p> <p>100 feet for Units 6, 60, 70 and 71</p>	10	0	P P P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<p><i>detrimental soil disturbance and improve the recovery of native</i></p>	<p>land or those identified in the silviculture prescription with insect concerns may be piled and burned as soon as possible to reduce fire hazard</p> <p>Where practicable, slash would be piled and burned in areas where detrimental soil disturbance already exists (i.e., old log landings, skid trails, and roads associated with past activity).</p> <p>Handpiles would be constructed so they are no larger than about 6 feet in diameter and 6 feet high.</p> <p>For locations within 50 or 100 feet of system trails and dispersed camp sites.</p> <p>Where practicable, slash would be piled and burned in areas where detrimental soil disturbance already exists (i.e. old log landings, skid trails, and roads associated with past activity). To the greatest extent practicable, slash piles would not be constructed on shrubs patches or other areas of dense understory vegetation.</p>			<p>C</p> <p>C</p> <p>C</p>	<p>P</p> <p>P</p> <p>P</p>	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		<p>Handpiles would be constructed so they are no larger than about 6 feet in diameter and 6 feet high.</p> <p>Locate piles outside of sensitive viewsheds where feasible.</p> <p>When activities occur along open trails, whenever possible slash will be treated within 100 feet of the corridor within 6 months and no longer than 1 year.</p> <p>Slash would not be removed from skid trails or landings to discourage off trail use.</p> <p>After burning, scarify the scorched area (6-8 inches deep without turning over the soil) and seed. Ideally seeding would be done in the fall, or as practicable. Use native seed composed of species similar to the surrounding area (check with botanist or native plant coordinator). Slash would be placed over the burn pile covering 65-70% of the scorched area to a depth of 2-3 inches.</p>			C	S	
					C	P	
					O	P	
					C	P	
					S	P	
Soils, Noxious	Delay	Delay underburning until weed control and vegetation re-seeding is	Unit 64	12	O	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
Weeds	Underburning <i>To provide time for weed control and re-seeding efforts to be successful</i>	successful. Prescribed fire would only be allowed once native vegetation is established, effective groundcover exceeds 60% of the surface area, and plants and plant roots can withstand fire.					
Visual Quality	<i>To minimize the visual impacts of skyline corridors</i>	<ul style="list-style-type: none"> To the greatest extent possible, fell trees first and establish corridors in openings. Vary the distance between cable corridors Establish corridors more frequently than every 75 feet to minimize residual damage and allow for narrower (less visible corridors) Retain irregular clumps of leave-trees- leave some larger clumps oriented up and down slope, lay out corridors between, not through the leave-clumps, if feasible, to the greatest extent practicable. 	Skyline harvest portions of Unit 1	14	C	P	
"	<i>To minimize the visibility of tree marking after</i>	<ul style="list-style-type: none"> Use cut tree marking so that no paint will remain visible after 	Unit 1	15	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<i>treatment</i>	<p>implementation.</p> <ul style="list-style-type: none"> • Use secondary cut tree color (yellow) or tertiary cut tree color (green) (FSH 2409.12 timber cruising handbook.) to be less visible than blue (primary cut tree color). • Use alternative unit boundary marking (tree tags) that doesn't use paint or only uses stump marks. 					
"	<i>To minimize slash piles and residue that appears man-made</i>	Flush cut stumps (8" or less in height).	When visible, up to 100' from system roads or trails in ground-based portion of Unit 1.	16	O	P	
"	<i>To reduce visual impacts of bridge abutment re-enforcement</i>	<p>Design will be coordinated with Forest Landscape Architect, and will consider design features such as:</p> <ul style="list-style-type: none"> • Use natural materials such as rounded (non-fractured) boulders or timbers with backfill to stabilize road/trail. • Avoid use of gabions which are not natural-appearing at close 	Spring Creek Bridge	17	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		range. If use of concrete is necessary, integrate color and texture.					
"	<i>To minimize visual impact of culvert replacement in terms of form, line, color and texture</i>	<p>Design will be coordinated with Forest Landscape Architect. Consider design features such as:</p> <ul style="list-style-type: none"> • Culvert will have mitered ends to reduce exposed surface area • Exposed metal surface of the culvert will be painted flat black or brown to reduce visibility and glare or an oxidizing treatment will be applied. • If visible any use of concrete would be colored or textured to appear less dominant in the landscape. 	Marshall Creek Culvert	18	S	P	
TES Plants	<i>To reduce impacts to native flora</i>	If plants of local concern, such as rare or sensitive plants, are detected in the project area, the Forest Botanist would be contacted so that protective measures may be revised or newly prescribed. This could include addition of buffers activity timing	Project Area	19	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		restrictions.					
Noxious Weeds	<i>To reduce or eliminate the introduction or spread of weeds</i>	Treat weeds on haul routes, decommissioned roads, landings, and other areas where ground disturbance would occur as a result of this project.	Project area	20	C	S	
“	<i>To reduce or eliminate the introduction or spread of weeds and the impacts of herbicide treatments</i>	Weed treatments will tier to Lolo National Forest Integrated Weed Management Plan (USDA Forest Service, 2007), including approved herbicides, treatment strategies and mitigation measures. Implement mitigation measures 1-48 (starting on page 28 of the Lolo National Forest Integrated Weed Management Plan 2007). These include evaluating the weed site for sensitive plant habitat, implementing Region 1 weed prevention practices and BMPs (FSM 2081.2), revegetating sites with a seed mix that includes native species, following herbicide application law, and posting signs where herbicides are being applied.	Project area	21	C	S	
“	“	Skyline corridors and skid roads will not be located in patches of leafy spurge.	Unit 1	22	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
“	“	Burn piles will be seeded in the fall, or as practicable, with native seed composed of species similar to the surrounding area (check with botanist or native plant coordinator)	Project area	23	C	S	
Forest Vegetation	<i>To protect at risk and/or large diameter (21"+) trees</i>	Where deemed necessary by a Silviculturist, measures would be taken to protect at risk and/or large diameter (21"+) trees from excessive crown and bole scorch to the extent feasible to avoid unintentional mortality,	All units	24	C	S	
“	<i>To protect desirable natural regeneration</i>	To the extent practicable, protect areas of acceptable natural regeneration that meet stand stocking and species preference objectives from prescribed burning fire effects.	All units	25	O	P	
“	<i>To reduce the potential risk of annosus root disease spread</i>	Treat any susceptible, live ponderosa pine stumps, greater than 12" dbh with Sporax within 24 hours of cutting.	Unit 1	26	O	S	
“	<i>To reduce the likelihood of Ips population buildup</i>	Where deemed necessary by a Silviculturist, slash piles that contain ponderosa or lodgepole pine slash would be burned in a timely fashion or baited	All units	27	O	P	√

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
“	“	Where prescribed by a Silviculturist, ponderosa or lodgepole pine slash creating operations may be restricted to July through November.	All non-commercial units	28	O	P	√
“	<i>To repel mountain pine or Douglas-fir bark beetles from individual trees or areas</i>	Verbenone or MCH capsules may be applied	Within the analysis area	29	O	P	√
“	<i>To reduce the potential for mountain pine beetle (MPB) mortality</i>	Where deemed necessary by a Silviculturist or Entomologist, thinning, chipping, or grinding operations may be prohibited during beetle flight (July – August); and underburning may be delayed until MPB populations are at endemic levels.	Units 1, 5, 6, 80-84, 60-71 100 A/B, and 101	30	O	P	√
“	<i>To avoid not meeting Opportunity Class 2 in the RNRA</i>	Remove from treatment 10 acres in the northern tip of the unit which was proposed for young stand thinning and prescribed burning.	Unit 81	31	C	P	
Wildlife - Flammulated Owl	<i>To reduce disturbance to mating, nesting, or fledging flammulated owls.</i>	No thinning (commercial or non-commercial) activities will occur in units known to be occupied by flammulated owls from May 1 thru Aug 1.	Units 1, 5, and 6	32	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		Burning may occur in May, if necessary, but will not occur June 1 thru Aug 1.					
"	<i>To reduce potential damage to known nest trees.</i>	Known nest trees will be protected using methods deemed most practical during layout.	Units 1, 5, 6	33	C	P	
"	<i>To reduce potential removal or damage of potential nest trees.</i>	Potential nest trees (snags >12" dbh with large 3" or greater cavities) will be identified and marked for retention as wildlife trees. These trees will be retained, to the extent practicable, given logging systems and other logistics. Note: because of flammulated owl nesting presence, snag retentions will likely exceed Forest Plan standards.	Units 1, 5, 6	34	C	P	
"	<i>To promote stand conditions favorable for flammulated owls.</i>	Large, healthy ponderosa pine trees will be favored as leave trees. Any live trees >21" dbh will be retained, regardless of species, to the extent practicable given project objectives and implementation logistics. Due to the importance of large diameter snags for flammulated owls, with the exception of snags near roads, skylines, trails or where public and	Unit 1	35	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		operational safety and facility protection is necessary, all dead trees greater than or equal to 21" dbh will be retained within treatment units, to the greatest extent practicable.					
"	<i>To maintain roosting habitat for flammulated owls.</i>	Within 150' of known and potential nest trees (large snags with cavities or those marked as wildlife trees) efforts will be made to retain 3-4 thickets of young dense trees following thinning and burning. A thicket is an approximately 20' diameter clump of sapling trees.	Units 1, 5, 6	36	C	P	
Wildlife – Elk	<i>To reduce the potential for disturbance to elk in areas of particularly high quality winter range.</i>	<ul style="list-style-type: none"> Minimize spatial extent of ground-based disturbance to elk by working in phases, from Dec 1- May 1, thus, allowing for undisturbed areas as refugia for wintering elk. Conduct work in phases (Phase I = Unit 1; Phase II = Units 4, 5, 6, 60-62, 64, 66, 90 and 91). Complete Phase II work before beginning Phase I work, if working in both Phases in the same winter. 	Units 1, 5, 6, 60-62, 64, 66, 90 and 91	37	C	P	
"	<i>To maintain snow-intercept cover in</i>	Favor large, healthy mature trees with	Unit 1	38	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<i>elk winter range habitat.</i>	full crowns as leave trees.					
"	<i>To protect important habitat features for elk.</i>	If any elk wallows are identified during layout, a wildlife biologist will be consulted and the unit will be modified to meet Forest Plan standard #21.	All units	39	C	S	
Wildlife – Mule Deer	<i>To reduce disturbance to mule deer on winter range.</i>	If treatments (including thinning or burning) are to occur in mule deer winter range from Dec 1- May 1, treatment will not occur in units 71 or 65 at the same time that treatment is occurring in units 2 and 3 to ensure mule deer adequate refugia from disturbance.	Units 65 and 71	40	C	P	
Wildlife – Goshawk	<i>To protect important habitat features and minimize disturbance to nesting goshawks.</i>	If a goshawk nest is discovered within the project area during implementation, mitigation measures would be implemented to help ensure that nest sites and post-fledgling areas receive minimal disturbance. A 40-acre buffer would be placed around each nest area to provide long-term nesting habitat. In addition, a 420-acres no-activity buffer would be put in place around the nest site from	All units	41	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		April 15 thru August 15.					
Wildlife	<i>To protect TES species</i>	If any threatened, endangered, or sensitive species or bear dens are located during project layout or implementation, a wildlife biologist will be notified. Management activities would be altered, if necessary, so that proper protection measures can be taken. Timber sale contract provisions that require the protection of threatened, endangered, and sensitive species would be included in the timber sale contract.	All units	42	C	S	
“	<i>To reduce the potential for animal/human conflicts, particularly with bears.</i>	Food and other animal attractant storage would be required for all contract and Forest Service personnel working in the project area from April 1 thru December 1. All personnel are required to follow forest-wide food storage order. The wildlife biologist will be notified of any suspected bear dens so appropriate measures can be determined at that time.	Project Area	43	C	S	
“	<i>To ensure snag retention</i>	Adhere to snag retention standards from the Lolo Forest Plan (1986). Specifically, for units in moderately	All units	44	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		warm and dry sites (habitat group 2) retain 4 hard snags/acre (min 10" dbh, 15' tall) with a min. of 1 big snag/acre (20" dbh, 40' tall). For moderately cool and dry sites (habitat group 3), retain 3 hard snags/acre and 1 big snag/acre. Select ponderosa pine, western larch, and Douglas-fir when available, in order of preference.					
Wildlife and Soil	<i>To ensure sufficient large woody debris for structural habitat diversity and forest floor function</i>	Follow Forest Plan standards for downed woody debris retention.	All units except Unit 200 (refer to RPM #3)	45	C	S	
Water Quality and Fisheries	<i>To reduce impacts to water quality/fisheries</i>	Best Management Practices (BMPs) will be met as a minimum for all operations to comply with the Lolo National Forest Plan.	Project Area	46	C	S	
"	<i>To reduce impacts to water quality/fisheries and cultural resources from vegetation treatments and associated road</i>	<ul style="list-style-type: none"> Apply INFISH RHCA buffers (300 feet from perennial fish bearing streams, 150 feet from perennial non-fish bearing streams and wetlands > 1 acre, 100 feet from intermittent streams and wetlands < 1 acre in the Rattlesnake Ck. priority watershed, and 50 feet 	All units	47	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<i>work</i>	<p>from intermittent streams and wetlands < 1 acre in the Marshall Ck. non-priority watershed).). Any variations from these buffers will need to be approved by the project fisheries biologist or hydrologist PRIOR TO implementation.</p> <ul style="list-style-type: none"> • The boundaries of all RHCAs will be flagged PRIOR TO on the ground activities. • Ground-based equipment is excluded from all RHCAs buffers except on existing road surfaces. • Non-commercial thinning treatments must not occur within 50 feet of a scoured channel. • All mechanized hand tools will be refueled outside RHCAs and fuel storage will not occur within an RHCA, unless on existing road surfaces with an approved spill containment plan in place. 					
"	"	<ul style="list-style-type: none"> • Follow mitigation measures outlined within the 2014 DRAFT Bull Trout Programmatic 	Haul routes	48	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		<p>Biological Assessment for Road Related Activities (USDA-FS and USDI-BLM 2014).</p> <ul style="list-style-type: none"> • Slash filter windrows will be applied to identified stream crossings and relief culvert outlets on haul routes BEFORE blading and haul are to occur to reduce sediment effects. • If winter hauling is to occur, snow drainage outlets will be created through snow berms PRIOR TO winter haul and kept open throughout the duration of winter hauling. Snow drainage outlets should typically be placed at or near drain-dips or other drainage features on the road. Clear/open culverts and ditches restricted by snow or ice to allow for proper drainage and maintain 2 inches of snow on roadways during winter plowing operations to protect the road surface from mechanical disturbance. • If winter haul will occur before planned road BMPs, the Timber Sale Administrator will contact the 					

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		appropriate Engineer and Hydrologist or Fisheries Biologist prior to winter operations to assure that typical requirements are sufficient to mitigate sediment effects, or if more specific BMPs would be necessary.					
“	<i>To reduce impacts to water quality/fisheries from rehabilitation work</i>	<ul style="list-style-type: none"> • Obliteration of roads or road segments within 300' of stream channels will be fully recontoured, slashed, and seeded (Level V closure). • Where existing crossing structures will be removed, streams will be restored to appropriate dimensions (width, depth, and slope). • Complete instream work between July 15th and September 1st or when stream is dry. • All stream crossings will be designed to meet Q100 flow conditions and Aquatic Organism Passage (AOP) requirements. • Any instream work requires a Stream Protection Act 124 Permit 	Decommissioned roads, stream crossings, and instream work	49	S	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		through Montana Fish, Wildlife and Parks					
“	<i>To reduce impacts to water quality/fisheries from prescribed burning</i>	<ul style="list-style-type: none"> • Follow mitigation measures outlined within the Programmatic Biological Assessment for Prescribed Fire (USDA-FS and USDI-BLM 2001), which includes specific measures regarding storage and handling of toxic materials/fuels and drafting water from streams. • Retain a duff layer within riparian/wetland areas. • No aerial ignition within RHCAs and no ground ignition within 50 feet of a scoured channel; however, incidental prescribed fire is allowed to creep into these areas. • Fire line will be allowed to anchor with RHCA but not to parallel within. • Burn piles are restricted within RHCAs. 	Project Area	50	C/0	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
Air Quality	<i>To assure that air quality standards are met</i>	<ul style="list-style-type: none"> All prescribed burning would be conducted in compliance with State, Federal, and County air quality standards. Prescribed burning ignition days would be regulated by ID/MT Airshed Group and Missoula County Air Quality Regulations for Airshed 3A and 3A/M to mitigate the smoke effects. Fire Management staff would generate public notice information just prior to burn days 	Project area	51	0	S	
“	“	All prescribed burning generated by this project would be accompanied by an approved prescribed burn plan.	Prescribed burning including landing and pile burning	52	0	S	
Recreation Wildlife	<i>To minimize impacts to recreational users and wildlife</i>	Stage implementation in phases (for example, treatments would not occur in the Woods Gulch units at the same time as the main Rattlesnake corridor units.	Project area	53	C	P	
Recreation	<i>To keep the public informed and reduce safety</i>	Notify the public of area, road or trail closures due to project activities that will be occurring. Use signing, local newspapers, news broadcasts, and	Project area	54	0	S	√

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
	<i>concerns</i>	Forest Web page and other social media platforms. Direct contact will be made with cooperators/partners to inform them of ongoing activities and closures.					
		Additional permanent signs will not be permitted without prior approval from the Missoula Ranger District Resource staff. Educational material will be provided in brochure or fieldtrip form (keeping within group size limits).	Project area	55	0	P	√
	<i>To minimize both short and long term impacts to recreation use and public safety</i>	<ul style="list-style-type: none"> • Coordinate treatment and timing with Missoula Ranger District Resource Staff to minimize conflicts with recreation use (including other recreation areas). • Warning signs will be placed on all trail access points and along the trail where activities are occurring. Warning sign placement must be coordinated with and approved by Missoula Ranger District Resource Staff. No placement of signs on trees or existing signs and information boards. 	Project area	56	C/O	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		Dust abatement will occur where deemed necessary by the Timber Sale Administrator.	Unit 1	57	C	S	
		Avoid removal of ponderosa pine or western larch with a diameter larger than 21 inch dbh (to the greatest extent possible) when locating landings, skid trails and skyline corridors. Unique character trees (e.g., "Three Larches", trees along TR515) would be featured and retained within the project. If mature trees must be removed along TR515 to accommodate large vehicles, the recreation specialist will coordinate with the contract administrator to agree to the clearing limits and brushing to ensure character trees and the character of the trail are maintained to the greatest extent practicable.	Project area	58	C	P	
		All flagging and boundary signs will be removed upon completion of each phase of the project.	Project area	59	S	P	
Recreation (Rattlesnake Limits of	<i>To be in compliance with the Management</i>	Recreation and silviculture staff will flag specific areas of concern within 100 feet from where trails intersect in	RNRA	61	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
Acceptable Change)	<i>Direction in the RNRA</i>	order to reduce encounters between recreationists and to prevent new trails from forming by “trail cutting” between trails. Thinning or brushing will not occur in these flagged areas					
	<i>To be in compliance with the Management Direction in the RNRA and to minimize impacts to wildlife and visual quality</i>	Feather vegetation, slash, or large woody debris within 100 feet of the trail corridors to provide screening and discourage off-trail use.	RNRA	63	C	P	
	“	Trails locations, alignment and surfacing will be retained. Trails will not be straightened or have their surface changed to an alternate material unless such actions are needed to enhance the trail and protect resources. If these actions are needed they must be coordinated with the Missoula Ranger District Resource Staff.	Project area	65	C	P	
	“	If trails are temporarily closed due to project activities, trail tread will be cleared of all slash immediately upon the trail being re-opened and	Project area	66	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		cessation of harvest and thinning activities.					
	“	To minimize losses of vegetation and reduce trail width expansion, equipment will not be staged off the main trail (TR515) within 0.8 miles of the main trailhead unless in the parking lot on graveled surfaces. No equipment will be staged within 100 feet of the restrooms at Spring Gulch Junction, School House Junction or Poe Meadows. Existing open areas, which will be recommended by Recreation staff, will be used for staging.	Project area	67	C	P	
		User created non-system trails will not be re-opened if lost due to project activities	Project area	68	O	P	
		A parking plan for use along Road 99/Trail 515 will be developed and required for vehicles that are operating in conjunction with treatments. This will include agency vehicles used during hand thinning and burning operations.	Road 99/Trail 515	69	O	P	
		Ensure access for Road 99 road and dam maintenance/inspections and	Road 99/Trail 515	70	C	P	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		maintain administrative access.					
		A landing and pile plan will be developed prior to implementation through coordination with the Contracting Officer's Representative, Recreation Staff and Timber Sale Administrator, and Contractor.	Project area	71	C	P	
Heritage	<i>To protect cultural and heritage resources</i>	During burning operations along Trail #99 protect historic telephone poles up the creek and along Rd 99 that look in some cases like old tall stumps or broken off snags.	Unit 71	72	C	P	√
"	"	If previously unknown heritage resources are encountered during project implementation, activities in that area will be halted and the Archeologist will be notified immediately.	Project area	73	C	S	
	<i>Cultural Resource protection flagging</i>	All site features within areas of potential disturbance will be flagged prior to implementation and avoided during implementation. Flagging will occur by archaeologist within a reasonable time period prior to implementation, to reduce attention and possible removal of	Project area	74	C	S	

Primary Resource	Resource Protection Measure Objective	Resource Protection Measure*	Units/Location	RPM#	Sale (C), Service (S), Other ¹	S/P ²	V ³
		feature/flagging by recreationalists.					
	<i>Tree Cutting</i>	Do not cut large ponderosa pine with barbed wire grown into them.	Unit 71	75	C	P	
	<i>Hand Piling</i>	Avoid piling on cultural resource features (e.g. can dumps, foundation remains, ditches, root cellar depressions)	Units 65, 70, 71, 100a, and 100b	76	O	P	
	<i>Burning</i>	Apply fire suppression activities during prescribed burning treatments near ponderosa pine with barbed wire grown into the bark and telephone poles.	Units 65,70,71, 100a, 100b	77	O	P	
Other	<i>To protect an ongoing research site during project implementation</i>	Apply a 200-foot buffer around site.	Near Spring Gulch (see Project File)	78	O	P	

*A resource protection measure may be a design feature that was identified before the project was developed to eliminate or avoid potential undesired effects, or it may be a project-specific design feature or mitigation measure developed to minimize or eliminate a known potential effect of this particular action. Another method, determined to be equally or more effective in meeting the resource protection measure objective recommended by a resource specialist and approved by a line officer, could be used.

¹ C = timber sale or other contract; S = service; O = other such as FS force account crew, silvicultural prescription, or treatment unit layout. ² S = standard operating procedure, meaning it is something the Missoula Ranger District routinely does. P = project-specific measure meaning this is a resource protection measure developed by the ID Team specifically for the Marshall Woods Restoration Project. ³ V = potential volunteer or partnership opportunity

Appendix C - Marshall Woods Restoration Project, Final Decision Notice –EA Errata

This errata corrects the following errors in the EA:

p. 27 4th paragraph, last sentence, strike “routine”

p. 135 2nd paragraph, 2nd sentence, change “Figure 4” to “Figure 34”

pp. 144-146 Because some shading was omitted in the printing process, replace Table 40 with the table below.

Table 40. Fuel Treatments by Alternative

Unit	Alternative A Fuels Treatment & Acres	Alternative B Fuels Treatment & Acres	Alternative C Fuels Treatment & Acres	Alternative D Fuels Treatment & Acres
Units shaded darker gray are treatments considered to be most effective in immediately reducing fuels after all treatments and the greatest longevity of effectiveness.		Units shaded lighter gray are treatments considered to be effective in the long term and short term would see increased fuel loads. The longevity of the effectiveness is considered shorter.		Units without gray shading are treatments considered to be the less effective in fuel reduction with the most limited longevity.
1	No Treatment	IC/HPB/UB 266	IC/HPB/UB 266	STT/HPB/UB* 266
2	No Treatment	STS/UB 184	STT/HPB/UB* 184	STT/HPB/UB* 184
3	No Treatment	CT/UB 41	STT/HPB/UB* 41	SST/HPB/UB* 41
4	No Treatment	STS/UB 46	STS/UB 46	STT/HPB/UB* 46
5	No Treatment	STS/UB 94	STS/UB 94	STT/HPB/UB* 94
6	No Treatment	IC/UB	IC/UB	STT/HPB

Unit	Alternative A Fuels Treatment & Acres	Alternative B Fuels Treatment & Acres	Alternative C Fuels Treatment & Acres	Alternative D Fuels Treatment & Acres
		109	109	109
60	No Treatment	YST/UB 38	STT/UB* 38	STT/UB* 38
61	No Treatment	STT/UB 144	STT/UB* 144	STT/UB* 144
62	No Treatment	STT/UB 234	STT/UB* 234	STT/UB* 234
63	No Treatment	Slash/UB 254	Slash/UB* 254	Slash/UB* 254
64	No Treatment	STT/UB 137	STT/UB* 137	STT/UB* 137
65	No Treatment	STT/UB 91	STT/UB* 91	STT/UB* 91
66	No Treatment	STT/UB 63	STT/UB* 63	STT/UB* 63
70	No Treatment	STT/HP/MP/UB 85	STT/HPB/UB* 85	STT/HPB/UB* 85
71	No Treatment	STT/MP/UB 229	STT/HPB/UB* 229	STT/HPB/UB* 229
80	No Treatment	YST/UB 27	YST/UB 27	YST/UB 27
81	No Treatment	YST/UB 185	YST/UB 185	YST/UB 185

Unit	Alternative A Fuels Treatment & Acres	Alternative B Fuels Treatment & Acres	Alternative C Fuels Treatment & Acres	Alternative D Fuels Treatment & Acres
82	No Treatment	YST/UB 230	YST/UB 230	YST/UB 230
84	No Treatment	YST/UB 35	YST/UB 35	YST/UB 35
90	No Treatment	STT/HPB 106	STT/HPB 106	STT/HPB 106
91	No Treatment	STT/HPB 73	STT/HPB 73	STT/HPB 73
92	No Treatment	STT/HPB 69	STT/HPB 69	STT/HPB 69
100A	No Treatment	Slash/JPB/HPB 19	Slash/JPB/HPB 19	Slash/JPB/HPB 19
100B	No Treatment	Slash/JPB/HPB 21	Slash/JPB/HPB 21	Slash/JPB/HPB 21
101	No Treatment	UB 729	UB 729	UB 729
200	No Treatment	UB/BB/JPB 450	UB/BB/JPB 450	UB/BB/JPB 450
Total Acres Treated	None	3959	3959	3959