Stonewall Vegetation Project

Record of Decision

Forest Plan Amendment #31

USDA Forest Service
Lincoln Ranger District, Helena-Lewis and Clark National Forest
Lewis & Clark and Powell Counties, Montana

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8/25/16
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Decision

As the Responsible Official for the Helena–Lewis and Clark National Forest, I have decided to implement management activities on 4,868 acres as analyzed and documented in the Stonewall Vegetation Final Environmental Impact Statement and the associated project record. My decision includes intermediate treatments (1,453 acres), regeneration treatments (660 acres), prescribed burning (2,755 acres), temporary road building (0.9 miles - which will be obliterated after implementation), and road maintenance (31.5 miles) (Table 1 and Table 2). This decision results in approximately 18,500 CCF.

My decision includes approximately 2,144 acres of prescribed burning and whitebark pine release (hand-work only) within the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area. There are no project activities planned in the Lincoln Gulch Inventoried Roadless Area. There is no timber harvest, road construction or reconstruction within the inventoried roadless area within this decision.

Refer to appendix D for a detailed unit by unit treatment description of my decision. Refer to the Decision Map for a spatial display of the decision (attached).

Table 1: Decision Summary of Acres Treated by Treatment Groups.

GROUP	DECISION TREATMENT SUMMARY	DECISION ACRES
1	Intermediate Harvest to Promote Mature Open Forests	235
2	Intermediate Harvest to Thin Young Forests	690
3	Regeneration Harvest in Areas of High Mortality Retaining Seed and Shelter Trees	476
4	Regeneration Harvest in Areas of High Mortality Retaining Rare Live Trees	184
5	Intermediate Harvest to Remove Minor Amounts of Dead/Dying Trees	25
6	Low Severity Prescribed Fire to Create Mortality Patches less than 5 acres	549
7	Mixed Severity Fire to Create Mortality Patches less than 5 acres and Jackpot Burning	363
8	Mixed Severity Fire to Create Mortality Patches less than 30 acres	1,288
10	Intermediate Harvest to Promote Mature Open Forests	503
11	Whitebark Pine Restoration	555
Total Commercial Harvest Treatments (acres)		**1,413**

Table 2: Decision Summary of Logging Systems, Burning Treatments, Road Haul Miles and Timber Volume.

Logging Systems, Burning Treatments, Road Haul Miles, and Timber Volume	Acres/Miles
• Tractor Logging (total acres)	992
• Skyline Logging (total acres)	421
Total Pre-commercial Thin Treatments (acres)	**700**
• Mechanical	408
• Hand treatments	292
Total Burning Treatments (acres)	**4,447**
• Total Burning after Harvest (acres)	1,692
• Total Prescribed Burn following Hand Treatments (acres)	2,755
o Total Burning in Designated Inventoried Roadless Areas (acres)	2,144
Total Road Miles Used for Haul	**32.4**
• Roads Built for Project Use, Maintained, and then Obliterated (miles)	0.9
• Road Maintenance (miles)	31.5
Timber Volume (CCf)	**18,498**

My decision includes a site-specific, non-significant forest plan amendment which is applicable only to implementation of this decision for the Stonewall Vegetation Project. This is a one-time exemption and is not intended to replace the existing standards.

The site-specific Forest Plan amendment for which this project is exempt include:

- Forestwide Standard 3 for hiding cover on summer range (USDA 1986 p. II/17) for the Beaver Creek and Keep Cool Creek elk herd units and thermal cover on winter range in the Beaver Creek herd unit;
- Forestwide Standard 4a for open road densities during the big game hunting season (USDA 1986 p. II/17-18) for the Beaver Creek and Keep Cool Creek elk herd units;
- Management Area T-2 standard for thermal cover on winter range (USDA 1986 p. III/35) within the management area;
- Management Area T-2 and T-3 standards for hiding cover in timber harvest openings (USDA 1986 III/35 and III/39) within the management areas within the project boundary.

For this decision I have also reviewed and considered this decision document's appendices which include the Threatened, Endangered and Sensitive Species Act determinations (appendix A), Project Design Feature, Best Management Practices, Mitigation and Monitoring for the Decision, (appendix B), Site-Specific Forest Plan Amendment documentation (appendix C), a detailed Treatments in the Decision by Unit (appendix D), Supporting Documentation for the Decision by Resource (appendix E), Forest Plan

Consistency Table (appendix F), and USFWS Terrestrial and Aquatic Incidental Take Statement/Terms and Conditions from the Biological Opinion documents received on this decision (appendix G) and literature cited and references used (appendix H).

Background

The Stonewall Vegetation Project area (project area) covers approximately 24,010 acres (approximately 23,670 acres are National Forest System lands) within Lewis and Clark and Powell Counties, Montana. The project area is on the Lincoln Ranger District, approximately four miles north and west of the town of Lincoln, Montana. The legal description for the project area is all or portions of Township (T) 14 North (N), Range (R) 9 West (W), sections 5-8, 17, 18, 20, 29; T14N, R10W, sections 1, 2, 11-13; T15N, R8W, sections 19, 20, 29, 30-32; T15N, R9W, sections 7, 8, 10, 11, 14-36; T15N, R10W, sections 25, 35 and 36; Principle Meridian, Lewis and Clark and Powell Counties, Montana.

The Stonewall area was shown to have a high departure from desired resource conditions as documented in a broad scale assessment completed between 2006 and 2009. That assessment was used to determine this project's purpose which is to: 1) Improve the mix of vegetation composition and structure across the landscape that is diverse, resilient, and sustainable to wildfire and insects, 2) Enhance and restore aspen, western larch, whitebark pine, and ponderosa pine species and habitats, 3) Modify fire behavior to enhance community protection while creating conditions that allow the reestablishment of fire as a natural process on the landscape, 4) Integrate restoration with socioeconomic considerations, and 5) Utilize economic value of trees with economic removal. The project's need for action is to reduce insect mortality related fuels within the wildland urban interface and move the landscape towards desired conditions described in the Helena National Forest Plan (USDA 1986).

Within the Stonewall Vegetation Project area, fire suppression and growing conditions over the last century resulted in a loss of open forest conditions and seral species (aspen, ponderosa pine and western larch). This created a more uniform landscape comprised of dense forests (Douglas-fir and lodgepole pine) susceptible to insect and wildfire mortality. In addition, a large-scale mountain pine beetle epidemic has killed most of the mature lodgepole pine and ponderosa pine. These conditions are elevating fuel levels that pose a wildfire threat to nearby homes and communities in the wildland urban interface.

In 2006, the Forest Service initiated the planning process for the Stonewall Vegetation project, (at that time referred to as the Stone-Dry area) with reviews of database information and ground conditions within the watershed.

Due to an interest in management of the Lincoln Ranger District, the Lincoln Restoration Committee (LRC), a group of private citizens with diverse community interests, was formed in 2008 (formerly the Lincoln Working Group) as part of the Montana Forest Restoration Committee (MFRC). The Montana Forest Restoration Committee is a collaborative group with representatives from diverse interests who came together in 2007 to address forest stewardship issues. This group adopted 13 restoration principles for on-the-ground treatments. The Lincoln Restoration Committee came together with the purpose of developing recommendations for restoration projects on the Lincoln Ranger District, while working within the framework developed by the Montana Forest Restoration Committee. Typically with projects, the Forest Service develops a proposed action for an area and then distributes it to the public for comment. On the Stonewall Project, the Helena National Forest worked with the Lincoln Restoration Committee in compliance with Executive Order 13352 of August 2004 - Facilitation of Cooperative Conservation. The Lincoln Restoration Committee developed recommendations for the Stonewall area considering several of the 13 restoration principles. These principles are consistent with the goals and standards of the Helena Forest Plan and current Forest Service policy and direction.

Overall, the Stonewall Vegetation Project focuses on restoration of tree species diversity for improvement of wildlife habitat and reducing fuels allowing for the reintroduction of fire. The final environmental impact statement documents the analysis of two action alternatives to meet this need, and the no action alternative.

Decision Rationale

As the Responsible Official, I have selected a combination of activities from the action alternatives analyzed in the final environmental impact statement. In selecting activities associated with my decision and described in this record of decision, I have considered the project's purpose and need; comments received and issues identified during public participation; objections received; and the potential direct, indirect, and cumulative effects of implementing this project as disclosed in the final environmental impact statement. I believe my decision provides the best balance of management activities to respond to the Purpose and Need, issues, and public comments, while complying with all applicable laws, regulations and agency policy relevant to this decision. This conclusion is also based on the project record, which includes a thorough review of relevant scientific information, a consideration of responsible opposing views, the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

Because my decision has not selected a "pure" alternative as developed in the final environmental impact statement, I directed the interdisciplinary team to analyze my decision in its entirety, this analysis is located in appendix E. The environmental effects of this decision are bound by those effects disclosed for each resource described in Chapter 3 of the final environmental impact statement which documents the interdisciplinary team analysis. This additional analysis serves to assure that this alternative will not have unanticipated effects beyond those which could reasonably be expected. All actions associated with this decision were considered in the various alternatives and this decisions effects fall within the range of effects disclosed in the environmental impact statement. Each specialist considered all aspects of my decision to assure that it is consistent with the Forest Plan, and all applicable laws, regulations and agency policy relevant to this project.

Since publishing the Stonewall final environmental impact statement and the draft Record of Decision, the Sucker Creek and Klondike fires occurred adjacent to and within a portion of the Stonewall Vegetation Project area. Approximately 660 acres were burned with mixed severity within the project area during these two fires. This included 29 acres within unit 79 and 350 acres within unit 88.

The Klondike fire occurred in lynx analysis unit BL-07 and the Sucker Creek fire occurred in BL-08. The Northern Rockies Lynx Management Direction (USDA 2007) specifies that if more than 30 percent of the lynx habitat in a lynx analysis unit is currently in stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects. The two wildfires resulted in lynx analysis unit BL-07 increasing to approximately 46 percent stand initiation structural stage. In keeping consistent with the Northern Rockies Lynx Management Direction, I have decided to modify treatments in units 79, 82 and 83 which occur outside the wildland urban interface and within lynx analysis unit BL-07. Treatments will be limited to only "daylighting" individual or groups of whitebark pine by clearing (hand slashing) while leaving the majority of the stand at current densities.

The site specific Forest Plan amendment for hiding cover on summer range and the open road density/hiding cover ratio during the hunting season (Big Game Standards 3and 4(a) respectively, Forest Plan p. II/17 and Management Area T2 and T3) is included in this decision for this project. Overall, I realize this project may affect elk to some extent by removing hiding and thermal cover. Regardless of

project implementation, this loss will occur naturally over the next few years due to extensive tree mortality and natural tree fall from the insect infestation. However, through the life of this project and with the subsequent recovery of hiding cover over time, elk habitat should remain abundant and well distributed across the Forest. It is anticipated that the Forest will retain habitat components necessary to maintain a viable and huntable elk population.

However, while habitat (e.g. hiding cover) is important to the long term viability of elk populations, elk populations - and their viability - are more likely to be controlled by harvest than by limits in cover (Unsworth et al. 1993, Bender and Miller 1999, Biederbeck et al. 2001, Conard et al. 2012). Furthermore, implementation of this project, and others for which a Forest Plan amendment has been or could be applied, should not impede the ability of the Forest to maintain and/or improve big game security while providing for an extended hunting season – the intent of Standard 4(a). The metrics used by Montana Department of Fish, Wildlife, and Parks (MFWP) to determine if elk objectives are being met indicate that for the most part the hunting districts that overlap with the Forest are at or above Montana Fish, Wildlife and Parks objectives. I have also decided to restrict activities associated with harvest to summer operations only which will limit disturbance to elk on winter range.

This decision will result in higher retained winter range thermal acres than alternatives 2 or 3 in the project area. This Decision will also result in higher retained elk hiding cover than alternative 2 in the project area. This Decision will result in higher retained winter range thermal acres than alternatives 2 or 3 for the Keep Cool Creek elk herd unit. This will also result in higher retained elk hiding cover than alternative 2 for the Beaver Creek-Lincoln elk herd unit.

For the most part, the most vigorous and generally the healthiest and largest trees on the landscape will be left to attain a wide range of beneficial uses. The primary treatment emphasis will be removing understory trees to reduce ladder fuels and stand density competition while also addressing the public's desire to retain old, large trees. Late-seral species will be favored, in particular ponderosa pine, whitebark pine, and aspen.

I have also decided to keep the treatment prescription for unit 51a as an improvement cut. However, I have changed the prescription definition slightly to retain more winter snowshoe hare habitat as well as to reduce the risk of fire spread onto adjacent private lands. Unit 51a will be modified to reduce the acres treated in response to loss of lynx habitat due to the Sucker Creek Fire. The objective of the modified treatment unit will be to modify fire behavior along Forest/private ownership boundaries.

Treatments will include removing conifer competition within and one tree length around clones to promote aspen, thinning the remaining conifers to around 20 foot spacing, favoring ponderosa pines, and pruning to minimize risk of torching. Burning will be limited to jackpot fuel reduction or pile and burn, depending on the amount of slash. These treatments will occur within a few hundred feet of the south boundary using logical breaks such as openings, roads, aspen stands, etc. These treatments are described within Group 10-Intermediate Harvest to Promote Mature Open Ponderosa Pine Forests and Aspen.

In this decision, I have dropped unit 37 due to past activities within this unit which exceeds Regional 1 Soil Quality Standards (SQS) for detrimental soil disturbance. To ensure Soil Quality Standards are met for the project, soil disturbance will be evaluated following the harvest treatment activities in units 1, 4, 5, 9, 10, 12b, 13b, 17b, 19, 20, 28, 40, 42, 43, 45, 46, 47, 49 and 74 to determine if burning after harvest, as proposed, can also be implemented and remain within Region 1 Soil Quality Standards. If it is determined that burning will exceed soil quality standards, then burn prescriptions will be adjusted so activities remain within standards. If burning prescriptions cannot be changed, then burning will be delayed until adequate soil recovery has occurred and soil quality standards are met. Analysis in the final

environmental impact statement reflects that the units cited in this paragraph will meet Regional Soil Quality Standards following harvest treatment activities.

The Lincoln Town-site which is within the project area contains important heritage sites. Units 11, 12a, 13a and 17a were proposed for harvest using ground based mechanical equipment in the final environmental impact statement. Due to the historical importance of this area, I am restricting the use of mechanical equipment within the Lincoln Town-site to implement restoration treatments. I am authorizing the use of chainsaws only to modify fuels to the extent needed to implement low intensity burning activities.

Project specific design features, that I believe are essential to minimizing environmental impacts and thus are essential to the successful implementation of my Decision, are listed in appendix B: Project Design Features, Best Management Practices, Mitigation and Monitoring. I do not consider these to be an option in any sense, but components necessary to achieving the desired effects as disclosed in the final environmental impact statement. Project monitoring listed in appendix B will be implemented.

I had my staff address the instructions which were received from the Forest Services' objection reviewing officer. Each resource updated and/or clarified their reports based on information received during the objection process. This included completing a security analysis in accordance with the proposed programmatic forest plan standard (Big Game Standard 4a) defined in the Blackfoot Non-Winter Travel Plan EIS and updating this final environmental impact statement to incorporate the Forest Plan amendment analysis. This review also included clarifying/revising resource analysis and several design criteria for lynx habitat, riparian harvest, whitebark pine management, old growth, soils and grizzly bear habitat effects. I have assessed the reviewing officer's instructions, and my staff's responses have been documented, added to the project record and summarized within this record of decision. All instructions were addressed by my staff concluding the requirement under 36 CFR 218.12. Therefore, this decision document constitutes the final administrative determination for the Stonewall Vegetation Project.

I know that this decision will not meet the desires of all public users and groups. However, to best meet the purpose and need for action, specific resource concerns, and Forest Plan goals and objectives for this area, I have decided to implement activities described in this record of decision.

Meeting the Purpose and Need

The purpose and need for action is determined by the extent and intensity of differences between the existing and desired conditions. Where there is little difference between these two conditions, the need for action is low. However, the need for action in this analysis area is compelling.

The Stonewall area was shown to have a high departure from desired vegetation resource conditions. Specifically, due to vegetation conditions in the project area being relatively homogenous by type, the area has not been very resilient to insects and disease. Stands were and are susceptible to insect attack and the mountain pine beetle outbreak has spread through the project area and many other stands remain highly susceptible to Douglas-fir beetle. Different types of proposed treatments will create more diverse vegetative structure moving the area towards more heterogeneous than homogeneous conditions.

By taking actions now, a more diverse and sustainable forest may result moving the area towards meeting the Forest Plan direction of having a healthy and productive forest ecosystem. Action is needed to reduce insect mortality related fuels within the wildland urban interface and move the landscape towards desired conditions described in the Forest Plan. This action responds to the goals and objectives outlined in the Forest Plan for the Helena National Forest, and helps move the project area towards desired conditions

described in that plan (USDA 1986). All action alternatives achieve progress towards desired conditions and outcomes as described in the Forest Plan and respond in various ways to the purpose and need for the project.

Measurement indicators were developed for each of the purpose and need statements to indicate how each alternative responds to these statements. The following section describes the purpose and need statements, lists the measurement indicators and presents the results for each alternative considered in detail, including my decision.

The following purposes for undertaking the Stonewall Vegetation project were:

- Improve the mix of vegetation composition and structure across the landscape that is diverse, resilient, and sustainable to wildfire and insects.
    - Enhance and restore aspen, western larch, whitebark pine, and ponderosa pine species and habitats.
- Modify fire behavior to enhance community protection while creating conditions that allow the reestablishment of fire as a natural process on the landscape.
- Integrate restoration with socioeconomic considerations.
    - Utilize economic value of trees with economic removal.

Purpose and Need Indicators by Alternative and Decision

Purpose and Need: Improve the mix of vegetation composition and structure across the landscape that is diverse, resilient, and sustainable to wildfire and insects considering the following objectives:

- Enhancement and restoration of aspen, western larch, and ponderosa pine species and habitats.
- Improved forest health in terms of reduced susceptibility (increased resistance) of individual stands and the landscape to diseases and insects found within the project area of concern.
- Reduction of extreme fire behavior on the landscape, especially in areas where the potential for wildfire damage to property is high.
- Sustainable supply of wood products to the local economy.

My decision will create forest conditions that are more resilient to future disturbance events because treated areas will have forest structures, tree density and species composition that are adaptable and more sustainable over time.

My overriding desired condition for the forests in the project area is for ecologically healthy and sustainable forest conditions that provide for a wide variety of resource and social benefits now and into the future. These forests should be resilient, which means they should be in a condition that allows them to adapt to and tolerate future fluctuations in climate, insect and disease populations, fire events, and other unknown factors without experiencing socially unacceptable or severe unnatural levels of impacts. There are several concerns that I have with the existing condition of the forests in this landscape relevant to this objective and which my decision addresses.

The goal of this project is to move toward a more stable forest ecosystem by creating vegetative conditions that are resilient and resistant to uncharacteristic disturbance. This decision will modify vegetation structure on approximately 20 percent of the project area, creating a more sustainable forest by establishing a more heterogeneous mosaic of structure, fuel loadings, species composition, and age class distribution. The homogeneity of the forested conditions will be changed thus resulting in conditions where a wildfire will burn under conditions that are more characteristic for the vegetative type. In addition, the wildfire can be managed with improved firefighter and public safety. The dry Douglas-fir forests currently are moderately uncharacteristic in terms of canopy cover and successional stage as

compared to the reference conditions for these types.

The more moist Douglas-fir forests that also have a lodgepole pine component are moderately uncharacteristic as well, compared to the reference conditions. This means that a wildfire will burn more acres and kill more trees as compared to a fire in these types that were closer to reference conditions. The Decision treats the project area in such a way as to create conditions that are more similar to reference conditions, and will leave the area in a state in which a wildfire would burn in a more characteristic fashion, leaving more live green trees.

By addressing stocking levels and tree species composition in stands that are uncharacteristically dense, this decision will promote increased growth rates, increased resistance to insects and disease, and greater resiliency in the event of disturbance. The changes in the continuity of the live Douglas-fir forest will be very important in sustaining green forests over time. The two most plausible mechanisms in which stand density relates to damage are the reduction of trees that will attract bark beetles and/or an increase in individual tree vigor, which allows for better defense from attack. Treatments in pine types recently killed by the mountain pine beetle will also cause the rapid establishment of desirable regeneration which will contribute to the resilience of future forests.

This decision maximizes treatment opportunities to enhance seral tree species such as whitebark pine, aspen, western larch as well as ponderosa pine. The Decision promotes all of these special habitats through treatments. These habitats have declined largely due to fire exclusion and their reduced presence on the landscape has had negative impacts to wildlife. Reestablishing a mosaic of these limited but important vegetation conditions, is consistent with direction found in the Helena National Forest Plan.

Purpose and Need: Modify fire behavior to enhance community protection while creating conditions that allow the reestablishment of fire as a natural process on the landscape

Increasing mortality in this area due to insects and disease, along with wildfire being largely absent for the past 100 years, has contributed to a situation where the risk for a high severity wildland fire is substantially increased. As shown by the 2003 Lincoln Complex Fires that burned approximately 36,000 acres and required a partial evacuation of the community of Lincoln, forests within the project area are very susceptible to stand replacement fires resulting in large areas of dead over-story trees. With this decision, fire behavior will be changed so that more areas of surviving live forests will be expected after a wildfire. This will be an important change that will result in a sustainable, resilient ecosystem.

A Regional Community Wildfire Protection Plan (CWPP 2010) which includes the Stonewall Vegetation project area was developed by The Tri-County Fire Working Group, which is composed of representatives from Broadwater, Jefferson and Lewis and Clark counties. Thirty-nine percent of the Stonewall project area is classified as wildland-urban interface. Specifically, my decision will reduce fuels throughout this wildland-urban interface on approximately 3,708 acres.

In all treatment units designed to meet project fuels objectives, trees will be removed that most contribute to ladder fuels and the continuous forest canopy cover; the largest trees of more fire tolerant species will usually be left. These treatments will reduce fuels and break up contiguous vegetation to create a heterogeneous fuel-scape so that areas with high fire behavior potential are interspersed with areas of mixed and low fire behavior potential, thereby limiting the potential for high-intensity crown fire to spread towards the wildland-urban interface. Fire management has evolved over time and fire managers look for opportunities to manage fire for multiple objectives. Reintroducing fire to the landscape and allowing it to occur as a natural process is desired in order to move the landscape toward the desired condition as outlined in the land resource management plan.

Ladder fuels provide an avenue for a fire to move from the ground to the forest canopy. Once fire gets into a dense canopy it becomes a crown fire and is capable of spreading rapidly through the tree tops if high-risk weather patterns develop. Crown fires also tend to cause spotting and fire brands ahead of the main fire, increasing the potential for large fire growth. I believe that reducing these fuels conditions in specific areas will create a safer environment for the firefighters and the public should a fire occur and protect human and resource values in the event of a wildfire.

I am also authorizing the thinning of 690 acres of sapling sized stands across the project area. Thinning treatments are intended to reduce fuel continuity and fire hazard both in the short and long term, similarly to the treatments in older stands. Stand vigor, health, species composition and tree sizes will also be improved in the short and long term by reducing competition and concentrating growth on desired trees and species. Fires in these post-thinned are less likely to result in torching or crowning. In the long term, thinning these young stands will result in more widely spaced trees, increase canopy base height, lower crown density of the forest canopy, less dead/down woody fuels, larger tree diameters and in most cases greater proportion and larger size of fire resistant tree species than similar stands without pre-commercial thinning.

This decision provides a pro-active management of the forest and will result in a substantially reduced risk of tree mortality from wildfire and/or bark beetles in high density stands. There is considerable evidence that less dense stands are likely to have less mortality and exhibit greater resiliency following wildfire or bark beetle attack than are higher density stands. The two most plausible mechanisms in which stand density relates to damage are the reduction of trees that will attract bark beetles and/or an increase in individual tree vigor, which allows for better defense from attack. By reducing density, ladder fuels, and current as well as future surface fuel loadings, the potential fire behavior within treated areas is expected to change, with more areas likely to burn as a surface fire instead of crown fire.

It is important to note that reducing fuel and tree densities will not necessarily prevent fires or increase our ability to control every fire. The elements of weather, drought, and topography that influence fire behavior will always have a role to play and may, on any given day or acre, override the effects of any management action. While it is not possible to always prevent a wildfire from occurring, it is possible to reduce the fire hazard in a particular area such as Stonewall and increase the probability that future wildfires will be less severe and intense. As shown by the Bear Gulch fire in 2008, Douglas-fir forests are very susceptible to stand replacement fire, resulting in large areas of dead over-story trees. With this decision, fire behavior will be changed so that more areas of surviving live forests will be expected after a wildfire. This will be an important change that will result in a sustainable, resilient ecosystem.

Purpose and Need: Integrate restoration with socioeconomic considerations, specifically, utilize economic value of trees with economic removal.

The final environmental impact statement states a need to integrate the action alternatives with socioeconomic considerations with specific consideration to the economic contributions to the local and regional economies by providing timber and other wood fiber products which has a direct impact to communities with jobs associated with harvest activities. This analysis discloses that this decision will not produce the highest output of either volume of timber and jobs supported for the action alternatives analyzed. However, this decision balances the need to recover merchantable wood fiber while protecting and mitigating impacts to important resource conditions such as water quality, wildlife habitat and threatened, endangered and sensitive species. As the Forest Supervisor, my responsibility is to ensure the Helena-Lewis and Clark National Forest is managed under a sustainable multiple-use management concept using ecological principles to meet the diverse needs of people. My decision provides approximately 18,500 CCF's of timber to the local industry and also contributes to the demands for wood fiber. This volume falls within the range presented for action alternatives in the Stonewall Vegetation final environmental impact statement. The sale of timber products will also help meet the other components of

the purpose and need including: reduce the buildup of fuels associated with fire suppression, improve the mix of vegetation composition and structure across the landscape that is diverse, resilient, and sustainable to wildfire and insects, enhance and restore aspen, western larch, whitebark pine, and ponderosa pine species and habitats, modify fire behavior to enhance community protection while creating conditions that allow the reestablishment of fire as a natural process on the landscape. The costs of activities associated with the removal of timber products including incorporating all design features are financially feasible.

Consideration of Issues and Public Comments

In addition to the purpose and need, I considered issues raised by the public and interdisciplinary team. The following section summarizes my consideration given to some of the issues raised. A detailed response to issues raised can be found in appendix A of the final environmental impact statement.

Noxious Weeds

The issue of existing and introduced noxious weeds is a concern that commonly arises when the Forest proposes any form of land management activity. While the spread of noxious weeds would continue under all alternatives considered for this project, my decision includes less potential effected acres than that of alternative 2 and more than what was projected for alternative 3. My decision includes eight design features (appendix B) focused on reducing noxious weed introduction and the application of best management practices specified in Forest Service Manual 2080. Additionally, treatment of noxious weeds in the Stonewall project area will occur in accordance with the requirements specified in the final environmental impact statement: Helena National Forest Noxious Weed Treatment Project and accompanying Record of Decision (USDA Forest Service 2006c, USDA Forest Service 2006d). My decision includes appropriate measures to move forward with a land management activity while minimizing the potential introduction and spread of noxious weeds.

Old Growth

The concern for old growth habitat was an issue raised in the Stonewall Vegetation Project. As outlined in the Old Growth and Snag Analysis in the Stonewall project file, Forest Plan standards for old growth are met for 3rd order drainages 203 and 204a. No old growth is included in any treatment units in either of these 3rd order drainages. An estimated 55 acres of old growth in Unit 2, outside of 3rd order drainages, will be burned under moist conditions to minimize mortality to larger trees (greater than 17-inches diameter-at-breast-height) and consumption of large woody debris (Design Feature WL-30). Portions of Unit 46 identified as old growth were dropped early on in the analysis process in response to the old growth issue. My decision addresses the concern raised regarding old growth.

Canada Lynx and Lynx Critical Habitat (T)

The issue of Canada lynx and lynx critical habitat was raised as a concern related to project activities. At the onset of the project, design features were developed to reduce effects to Canada lynx, lynx habitat, and designated critical habitat for lynx. These have been incorporated into my decision.

The entire project area is within designated occupied and core lynx habitat (USDI FWS 2005, USFW FWS 2006) as well as lynx critical habitat (USDI FWS 2009a, USDI FWS 2014). A terrestrial biological assessment (BA) dated August 8, 2016, was prepared for this decision and transmitted to U.S. Fish and Wildlife Service (USFWS) for their review and response. A biological opinion was received from U.S. Fish and Wildlife Service on August 24, 2016. This decision has met all the consultation requirements

and I have incorporated into my decision the terms and conditions provided me from the U.S. Fish and Wildlife Service (appendix G).

The Stonewall Vegetation Management Project area is fully contained within two lynx analysis units (BL-07, BL-08), and no other lynx analysis units will be affected by the project. Effects to individuals and acres of stand initiation, multi-story and mid-seral habitat affected in these two lynx analysis units has been evaluated (terrestrial biological assessment) and considered in my decision. All applicable standards and guidelines in the Northern Rockies Lynx Management Direction that apply to this decision were addressed for lynx analysis unit BL-07 and BL-08 (terrestrial biological assessment). This decision is also consistent with the terms and conditions from the biological opinion on the effects of the Northern Rockies Lynx Management Direction on Canada Lynx. The effects of the Sucker Creek and Klondike Fires of 2016 have been considered in my decision relative to lynx needs. I have modified Unit 51a to reduce the acres treated in response to loss of lynx habitat resulting from the fire.

Critical habitat designation for Canada lynx (USDI FWS 2009) was published on February 25, 2009, and includes the entire project area. The analysis is separate from that applied to the Northern Rockies Lynx Management Direction, therefore, consultation on lynx critical habitat is not tiered to the Northern Rockies Lynx Management Direction (USDA FS 2007a). The Stonewall Vegetation project analysis considered the Primary Constituent Elements (PCEs) of lynx critical habitat and encompassed the appropriate landscape scale, consistent with the lynx critical habitat rule. All of the Primary Constituent Elements, including deep fluffy snows and connectivity, are abundant and well-distributed across the project area. No multistory feeding habitat in critical habitat will be affected outside the wildland-urban interface. The effects on lynx critical habitat will occur on a very small portion of Critical Habitat Unit 3. Those effects are quantified in the terrestrial biological assessment. The Primary Constituent Element for snowshoe hares (PCE1a) will continue to be available within Canada lynx critical habitat and this decision will not cause a permanent loss or conversion of the boreal forest on a scale proportionate to the large landscapes used by lynx.

The determinations for Canada lynx and lynx critical habitat are ***May Affect, Likely to Adversely Affect***, for the Stonewall Vegetation Project.

Grizzly Bear (T)

During project scoping, the issue of how the project will affect grizzly bears was raised as a concern. The project analysis and my decision consider the effects to individual bears and changes in grizzly bear security cover and potential conflicts with humans. Additionally, consideration was given to security core habitat, open road density and total road density, which are specific measures used to evaluate changes within the grizzly bear recovery area.

Of the seven grizzly bear ecosystems identified in the Grizzly Bear Recovery Plan (USDI 1993), five are currently occupied. One of the five is the Northern Continental Divide Ecosystem (NCDE) which occurs in part on the Helena National Forest. The Stonewall project area is located in the southern most extension of the Northern Continental Divide Ecosystem grizzly bear recovery zone. My decision is compatible with the grizzly bear recover plan.

The Stonewall project area is within the Landers Fork bear management unit (BMU) and includes portions of the Arrastra and Red Mountain sub-units. These subunits were used to analyze direct, indirect, and cumulative effects to the grizzly bear. Conservation measures for the grizzly bear, including standards and guidelines, were addressed at the subunit scale in the project analysis. Because all treatments will increase human activity during the non-denning period some displacement of bears is expected while treatments are being implemented. In total, treatments would affect less than 6 percent of

the Arrastra subunit and 2 percent of the Red Mountain subunit. Commercial and pre-commercial harvest treatments account for 3.2 and 0.3 percent of the Arrastra and Red Mountain subunits, respectively. Whereas, prescribed burning accounts for 3.6 and 2.9 percent of the Arrastra and Red Mountain subunits, respectively. The greatest potential for displacement is within the Arrastra subunit. Existing forested cover will be maintained on 96 and 99 percent of the Arrastra and Red Mountain sub-units, respectively The Arrastra Mountain subunit meets the 19/19/68 guidelines for open motorized route density, total motorized route density, and Core area before, after and during project implementation. For both the Arrastra and Red Mountain subunits, the majority of denning habitat occurs in the Scapegoat Wilderness which has no treatments under this decision.

A terrestrial biological assessment (BA) dated August 8, 2016, was prepared for my decision and transmitted to U.S. Fish and Wildlife Service (USFWS) for their review and response. A biological opinion was received from U.S. Fish and Wildlife Service on August 24, 2016. The determination for the grizzly bear is ***May Affect, Likely to Adversely Affect***, for the Stonewall Vegetation Project.

Bull Trout (T)

Timber harvest implementation units have been modified so they are outside of riparian habitat conservation areas, which minimizes the sediment delivery to streams from treatment units and results no change in forest canopy or large woody debris recruitment. The project design features for prescribed fire will comply with INFISH's FM-4 standard with the following design features; no ignition will occur within riparian habitat conservation areas and precautions will be taken to prevent fire backing into the riparian habitat conservation area and streamside management zone. Consequently, only insignificant or discountable effects to bull trout would be expected from vegetative management treatments. My decision includes 0.9 miles of temporary roads that will be built for project use as a haul route and then obliterated. None of these temporary roads will be within the INFISH riparian habitat conservation area buffers. Consequently, these road segments built in upland locations without surface hydrologic connection to any stream channel are not predicted to convey sediment to stream channels. Best management practices maintenance will occur on approximately 32.4 miles of haul road. Project-related road improvements include surface grading, re-establishment of drainage features (grade dips and ditch-relief culverts), and application of gravel at stream crossings and other sediment delivery points. Sediment delivery to streams may increase during the project as a result of ground disturbing maintenance and culvert cleaning work, but would be offset by long-term benefits those improvements provide.

The fish habitat variable most affected by this decision, sediment by depth in trout reproductive habitat, could be generated from two primary sources: roads and vegetation treatment units. In this decision, vegetative treatments will have an extremely low probability of any sediment delivery since project design features are more stringent than INFISH standards. Road improvements and best management practices effectively implemented will reduce sediment delivery. In addition, the probability that sediment delivery will actually occur is relatively low. In regard to prescribed fires, relatively rapid recovery of ground cover in burned areas will substantially reduce the potential for soil erosion from treatment units within two to three years. This decision will result in short-term impacts to fisheries resources from road maintenance treatments. The project incorporates special design features that reduce sedimentation risks by incorporating additional restrictions in riparian habitat conservation area buffers and using low-severity burns. Moreover, slight long-term sediment reductions (improvement), or at worst, maintenance of existing conditions in trout reproductive habitat is predicted due to road best management practice measures.

Although implementation of the Stonewall Vegetation Project will result in best management practices that reduce sediment delivery that in the long term are anticipated to have a restorative effect on several

indicators and resulting in improving trends for several Primary Constituent Elements, other roads that would not be addressed in this project have sediment delivery sites that will continue the ongoing and historic anthropogenic sediment delivery to streams.

Such adverse effects have not undergone consultation and as a result, the existing baseline continues to be degraded, resulting in a determination for Bull Trout and Bull Trout Critical Habitat in the Blackfoot River, in, adjacent to and below the Stonewall Vegetation Project of ***May Affect Likely to Adversely Affect*** for the Blackfoot River Section 7 Watershed and the Blackfoot Core Recovery Area.

A fisheries biological assessment (BA) dated August 10, 2016, was prepared for my decision and transmitted to U.S. Fish and Wildlife Service (USFWS) for their review and response. A biological opinion was received from U.S. Fish and Wildlife Service on August24, 2016.

Inventoried Roadless Areas

Inventoried roadless area related issues that arose during public comment periods included concern with appropriate application of the 2001 Roadless Rule, types of treatments within the inventoried roadless area, and inventory/evaluation/boundary issues specific to Roadless areas.

My decision includes approximately 2,144 acres of prescribed burning and whitebark pine release (hand-work only) within the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area. There are no project activities planned in the Lincoln Gulch Inventoried Roadless Area. There is no timber harvest, road construction or reconstruction within the inventoried roadless area within this decision.

I have examine the Roadless Rule and my decision activities fall within the exception found at 36 CFR 294.13(b)(1)*(ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.* All treatment units in the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area have variable average diameter-at-breast-height and tree species diversity. Treatments will generally consist of small trees and shrubs below the average diameter-at-breast-height for the stands. The inventoried roadless area report for this project documents that Natural and Undeveloped Roadless Area characteristics will be maintained and enhanced by the project.

There was both supportive comments as well as those with concern were received specific to types of vegetation treatment activities within the inventoried roadless area. I limited the type of treatment within the inventoried roadless area boundary to non-commercial and prescribed fire related activities, which only required hand treatments.

Issues raised related to inventory/evaluation/boundaries for the inventoried roadless areas were identified as being programmatic and not within the bounds for examination under this vegetation project analysis and decision.

Elk

Issues addressed for this project specific to elk included acres of hiding and thermal cover, habitat effectiveness, acres of security habitat, changes in access and mortality, acres of foraging habitat, Changes in hunting opportunity, and compliance with the Montana logging study.

Treatments will reduce elk hiding and thermal cover in both herd units that were analyzed for this decision, whereas the amount and distribution of forage will increase. **This decision requires a site-specific, non-significant forest plan amendment as described in appendix C.**

Hunting opportunities will be maintained and adequate elk habitat will continue to be available within both herd units to support desired levels of elk. There will be no increase in public access or changes to elk security habitat.

Implementation will result in both short and long-term increases in available forage on approximately 11 percent of the combined herd units, including increases on summer, transition and winter range. The increase in forage is expected to maintain or improve herd health. Within the combined herd units, approximately 93 percent of the existing hiding cover and 86 percent of the existing winter range thermal cover will be maintained. Cover will continue to be available within and adjacent to treatment units and across the landscape.

Public Involvement

Scoping

The Forest published the Notice of Intent (NOI) in the *Federal Register* on January 13, 2010 (75 FR 1748). The NOI asked for public comment on the proposal to be received by February 22, 2010. Approximately 700 letters were mailed explaining the proposal and asking for comment to interested individuals, groups and agencies on January 15, 2010. In addition, as part of the public involvement process, an open house meeting was held on February 3, 2010, and project information was available on the Forest website at www.fs.usda.gov/helena/. The project has been listed in the Forest's Schedule of Proposed Actions since April 2010.

A total of 80 scoping responses were received via email, public comment form and letters; 30 were in support of the proposed project activities. The majority of responses suggested information to include in the analysis documents, identified language to clarify, or listed elements pertaining to a specific resource to include in the effects analyses. Using the comments from the public, and other agencies the interdisciplinary team developed a list of issues to address The resource specialists' reports include this information as well as the analysis of the project effects on the various resources. The resource specialists' reports are filed in the project record and incorporated by reference and summarized in Chapter 3 – Affected Environment and Environmental Consequences, of the final environmental impact statement.

Eight responses expressed concerns or suggestions regarding travel management of area roads and motorized, winter recreation opportunities. The Stonewall Vegetation Project is not a travel planning project and does not propose to change the permanent road system in the project area. Travel management of existing routes is addressed in the Blackfoot-North Divide Winter Travel Plan (September 2013) and the Blackfoot Non-Winter Travel Plan (March 2016).

A few responses included items of literature to be considered, some noted as opposing science information. As part of the analysis for this project, resource specialists reviewed and considered relevant scientific literature, including submitted articles. The literature review is included in the project record and available on the forest website www.fs.usda.gov/helena/.

Draft Environmental Impact Statement

The Notice of Availability of the draft environmental impact statement was published in the *Federal Register* on May 3, 2013 (78 FR 26027). Also on this date, the draft environmental impact statement was

posted to the Helena National Forest website. The Notice of Availability started the 45-day comment period on the draft environmental impact statement. Approximately 240 letters and electronic mail attachments announcing the availability of the draft environmental impact statement were sent to interested and affected individuals, groups and agencies on April 30, 2013. A legal notice announcing the opportunity to comment on the Stonewall Vegetation Project draft environmental impact statement was published in the Helena Independent Record (newspaper of record) on May 6, 2013. Seven comment letters on the draft environmental impact statement were received. The Forest Service's response to those comments is contained in appendix A of the final environmental impact statement. These comments were used to help develop the final environmental impact statement and this decision.

Final Environmental Impact Statement

In April 2015, the Final Environmental Impact Statement and/or its summary and the draft Record of Decision were mailed to the individuals, groups and government agencies who requested them and/or commented on the draft environmental impact statement. In anticipation of potential updates to the final environmental impact statement as a result of objection information, I decided to wait to publish the final environmental impact statement in the Federal Register until after objections were received in order to be able to be responsive to them in the final environmental impact statement. An updated final environmental impact statement was published in the Federal Register on August 24, 2015.

Objection Process Pursuant to 36 CFR 218

The Stonewall Vegetation Project final environmental impact statement and draft record of decision was subject to the Project-Level Pre-decisional Administrative Review Process, "Objection Process," pursuant to 36 CFR 218 Subparts A and B. A legal notice announcing the opportunity to file an objection on the Stonewall Vegetation Project final environmental impact statement and draft Record of Decision was published in the Helena Independent Record (newspaper of record) on April 30, 2015. The Forest received two objections from Native Ecosystems Council (NEC) and Alliance for the Wild Rockies (AWR). As described in 36 CFR 218.8, the objectors were to provide sufficient narrative description of the specific issues related to the project, and suggest remedies that would resolve the objection.

A regional interdisciplinary panel was convened during the week of July 6-10, 2015 to evaluate the received objections. The panel thoroughly reviewed the objections and all pertinent information and available supporting documentation in the project record provided by the Helena National Forest. The review team made recommendations and suggestions regarding their findings to the objection reviewing officer.

On July 13, 2015, the Lincoln District Ranger, representatives of the interdisciplinary team, the Deputy Regional Forester (Objection Reviewing Officer), Regional Appeals/Objections Coordinator, and I (Helena – Lewis and Clark Forest Supervisor and Responsible Official) met (phone) with the Objector (NEC) and members of the public interested in this project. The purpose of this meeting was to seek resolution to some or all of the objection issues raised in the objection submitted for this project. In that meeting, no remedies for specific objection issues were offered; therefore, no resolutions to their objections were reached. Broad, generic remedies were suggested including 1) only need fire buffers (100-150 foot), fire proof structures; do not need to log, 2) MPB do not increase fire, green trees burn hotter, scare tactic to log, 3) HNF study showed that bird populations stayed the same, cavity nesters increased, closed canopy birds declined, 4) Squires – down logs are good for most wildlife, logged = 100 year impact to lynx, dead trees are good for pine martin, snowshoe hare, forage for birds, illogical to clear-cut, may be bad for elk – but they are only one species. David Schmidt, the Objection Reviewing Officer (ORO), reviewed the project in consideration of the objections and suggested remedies. He

responded to the Objectors with letters signed July 30, 2015 and found the project complied with all applicable laws and the Forest Plan.

Based on the interdisciplinary panel recommendations, discussions during the objection meeting and a thorough review by the objection reviewing officer, instructions for one objection (NEC) were issued to the Forest intended to provide clarifying information to be responsive to the objection points, better demonstrate compliance with laws, regulations, policies and Forest Plan standards. Following are these instructions and how they were addressed.

1. ***Conduct a security analysis in accordance with the proposed programmatic forest plan standard defined in the Blackfoot Non-Winter Travel Plan EIS. Although there is no final decision on this process, I find that it presents the best available science for big game security. I am instructing that the Blackfoot methodology analysis be incorporated into the final environmental impact statement under the discussion on big game security.***

   The elk security analysis has been updated and incorporated into the final environmental impact statement, pages 545-546 , in accordance with the proposed programmatic forest plan standard defined in the Blackfoot Non-Winter Travel Plan environmental impact statement.

2. ***Incorporate the Forest Plan amendment analysis into an updated final environmental impact statement as a stand-alone section, rather than as an appendix to the draft record of decision, as is now the case. I am instructing that this section clarify the methodologies used and address available science, including Hillis et al. (1991), Lyon et al. (1985), and Black et al. (1976).***

   Specifically, Helena National Forest Land and Resource Management Plan Non-Significant, Site-Specific Forest Plan Amendment was incorporated into the final environmental impact statement on pages 525 – 553. This analysis includes a cumulative analysis effects in two ways: with a site-specific project amendment and applying the programmatic amendment found in the analysis for the Blackfoot Non-winter Travel Plan. Methodologies for elk hiding cover is found on pp. 318-319, 526-527.

3. ***Include measures (as design features in the final environmental impact statement) for conducting prescribed burning in lynx analysis units in order to be consistent with the Northern Rockies Lynx Management Direction for stand initiation structural stage, and clarify effects of prescribed burning on lynx habitat.***

   Two design features were developed for the final environmental impact statement and incorporated into the final decision to insure prescribed burning in lynx analysis units are consistent with the Northern Rockies Lynx Management Direction. They are as follows: 1). Within burn units outside the 2-mile zone of the wildland-urban interface, a pre-treatment field review, coordinated by a wildlife biologist, would identify firing patterns and control lines necessary to ensure that inclusions of stand initiation and multi-story hare habitat are not affected. 2). To promote or maintain lynx habitat characteristics while reducing fuels and promoting aspen/ponderosa pine, treatment would be designed and laid out in coordination with a wildlife biologist. The wildlife report has determined implementation of these design criteria will result in high effectiveness: this would be implemented by Forest Service personnel during layout and implementation prior to treatment. While some habitat may be treated to meet fuel objectives, the likelihood that lynx habitat will be affected will be greatly reduced.

Mixed-severity burning: Mixed-severity burning will exhibit a wide range of effects on vegetation resulting in a mosaic of conditions ranging from unburned (20 percent of the site), to lightly burned (55 percent of the site) and moderate to severe fire (25 percent of the site). Over 95 percent of the mixed severity burning under both alternatives is proposed in mid-seral habitat that presently has poorly developed understories and do not currently support snowshoe hares. The remainder is proposed for stands that are classified as mixed severity, however with implementation of project design features, any existing inclusions of winter hare habitat should remain unburned and there will be little actual reduction in current habitat availability for snowshoe hares. Effects of lightly burned areas would be similar to those discussed above for broadcast burning. Moderate to severe fire will create over-story canopy openings of various sizes ranging from 10 to 75 acres. Due to the canopy reduction resulting from higher severity fire, approximately 25 percent of the acres proposed for mixed severity treatment will have a long-term reduction (greater than 10 years) in the understory and unsuitable stand initiation habitat conditions would be created on this acreage.

There will also be an immediate reduction in potential denning habitat in fire created openings due to loss of down wood; however this is expected to improve within five to 10 years due to the large quantities of down wood which will be created in these openings. Mature forest stands that have openings created through fire can provide snowshoe hare habitat and over time (greater than 15 years) as the understory develops, winter foraging habitat will be created within these openings. Also due to the recruitment of dead wood from fire mortality, denning habitat potential would be restored or improved within these openings within five to 10 years of treatment. So while treatment will result in a short-term reduction in denning and summer foraging habitat, because all units will have a mosaic of burned and unburned lands and considering no winter foraging habitat will be treated, all units will retain den and foraging habitat in the short term and improve the amount and distribution of den and winter foraging habitat over the long-term.

4. ***Clarify the context and extent of riparian harvest in the final environmental impact statement to demonstrate that INFISH riparian management objectives will be met. Include a discussion on the effects of riparian harvest, if any, on stream temperature.***

In the final environmental impact statement on page 652, it states that in all units, INFISH riparian habitat conservation areas will be delineated and standard widths will be maintained for each category of stream or water body. Additionally it goes on to state that no harvest will occur in the riparian habitat conservation areas. This page also states that water temperatures currently appear suitable for native trout; implementation of the riparian habitat conservation areas guidelines and standards, as well as the project design features will maintain riparian and stream habitat and the project would have little potential, if any, effect on stream temperature.

Riparian buffers are described under project design features (S/WS/F – 17 riparian habitat conservation areas of appendix B). As noted in the design features, hazard trees adjacent to harvest units may be felled due to safety concerns but will remain on site. There will be no commercial or pre-commercial harvest, no dead tree removal, and no landings located in riparian buffers. No fire ignition will occur within riparian habitat conservation areas and efforts will also be taken to prevent fire from backing into riparian habitat conservation areas.

5. ***Clarify the effects of riparian harvest in riparian habitat conservation areas on wildlife.***

In all units, INFISH riparian habitat conservation areas will be delineated and standard widths will be maintained for each category of stream or water body. All standards and guidelines

for timber, roads, fire/fuels and general riparian area management will be implemented. Project design features were adopted to provide additional benefit to habitat features and maintain riparian management objectives. These features include no removal of dead trees needed for woody debris recruitment or floodplain within the riparian habitat conservation area, no pre-commercial thinning in riparian habitat conservation areas, no ignition in burn units within the riparian habitat conservation area, and efforts will be taken to prevent fire from backing into the riparian habitat conservation areas. No tree removal will occur in the riparian habitat conservation areas.

With implementation of INFISH buffers, much of the riparian habitat will not be treated, although scattered low-intensity burning will occur. Where burning occurs, herbaceous vegetation and shrubs/hardwoods would increase and riparian habitat will be maintained or improved. Riparian habitats will remain intact and will continue to be available.

6. ***Whitebark pine management needs to be clearly defined as a project design feature in the final environmental impact statement. Develop a project design feature specific to avoiding pockets of whitebark pine regeneration during ignition with option for release.***

In the final environmental impact statement on pages 27-28, it states under the heading "development of the proposed action," that benefits anticipated from this project include maintaining, improving and restoring vigor to aspen groves and whitebark pine. Additionally, in appendix B for the Decision a specific design features (SILV-2) addresses avoiding pockets of whitebark pine regeneration which leaves options for release. SILV 2 states the following: "Assess low- and mixed-severity prescribed burning units containing groups or stands of whitebark pine to determine if areas need pre-burn treatments to protect whitebark pine from damage during burning.

If needed, pre-burn treatments should take place a year prior to the proposed landscape burning. The pre-burn treatments could include cutting and directional felling of conifer trees to increase fuel loadings, improve continuity of the fuelbed, and reduce fuel loads around whitebark pine trees. Created openings designed to serve as nutcracker caching sites should be cut as near-circular areas one to five acres around mature whitebark pine trees.

Concentrated pockets of advanced regeneration will be avoided during ignition, to be addressed in the Burn Plan. These unburned areas will be evaluated for potential release of whitebark pine following treatment. It is recognized that some seedlings and saplings will likely be killed by surface fires, and to identify and protect all of them over large acreages would be impractical. Additionally, the resistance of these understory whitebark pine to blister rust is unknown, as is their ability to release following thinning of the understory (Keane and Parsons 2010). New seedlings originating from surviving, seed producing mature whitebark pine, with presumably a higher resistance to blister rust (Keane and Parsons 2010), and planting of known resistant seedlings will result in stands with greater resistance to this disease."

7. ***Clarify potential impacts of prescribed burning to grizzly bear core habitat.***

Impacts of prescribed burning to grizzly bear and core habitat are described in the final environmental impact statement on page 441 - 442 and in the terrestrial biological assessment. CORE habitat is defined as those areas more than 500 meters (0.3 miles) from a motorized access route during the non-denning period and at least 2,500 acres in size. Summarized below are some of the key findings.

The final environmental impact statement states, including all acres within designated burn areas, prescribed burning proposed under alternative 2 would affect 17 percent and 41 percent

of the Arrastra Mountain and Red Mountain subunits lands within the project boundary respectively, whereas burning under alternative 3 would affect 10 and 30 percent of these subunit lands within the project area. For the entire subunit however, prescribed burning would only affect four percent of the Arrastra subunit and three percent of the Red Mountain subunit. Considering that prescribed burning would be completed over a 10-year period, and less than 80 percent of the units are anticipated to be burned, and burn intensity would vary within units resulting in pockets of over-story removal within units, the impacts to available cover and forage would be less than the reflected percentages. Mixed-severity burning, which includes some high-intensity burning, would create openings and result in a long-term loss of forest cover on 25 to 30 percent of the site. These openings would vary in size, and would be widely scattered and interspersed with riparian buffers, untreated areas and low-severity burn areas. Cover for bears would be retained on all sites. As a result, bears would continue to utilize these fire-created openings for foraging following treatment. While there would be little change in over-story on areas affected by low-severity burning (50 to 55 percent of the site), understory cover would be reduced. Riparian buffers and untreated areas (at least 20 percent of the unit) would also provide intact cover interspersed throughout the burn unit.

Since the majority of the prescribed burn-only units occur within security core habitat as defined by the lack of motorized access, it is anticipated that the increase in forage due to low- and mixed-severity burning and any openings created would receive considerable use by bears within a year of burning due to the flush of succulent forbs and grasses. Burns treatments would also be spatially and temporally distributed throughout the project area minimizing the potential effects of temporary displacement of bears and ultimately resulting in better mosaic of remote high-quality forage areas interspersed with secure cover.

Proposed burning would result in a flush of herbaceous vegetation (grasses and forbs) and it is expected that spring forage would increase within a year of the burn and would be maintained at levels above current conditions well into the future (greater than 20 years). Similarly, production of shrubs such as huckleberry and buffalo berry would increase both in the short (five years) and long term (greater than 50 years) (Martin 1980). Finally, broadcast burning and hand thinning and pile burning in areas of whitebark pine would maintain whitebark pine on over 900 acres under both action alternatives. As a result, it is expected that proposed burning would maintain security cover, while increasing the diversity and distribution of grizzly bear foraging habitat across the landscape. Like timber harvest, use of burn areas where forage is created would be greatest in more remote areas.

Proposed mixed-severity burning would help restore fire to the landscape as well as increase the availability of openings/meadows in remote areas preferred by grizzly. As a result, both alternatives are expected to create landscape-level conditions preferred by grizzly (Nielson et al. 2004, Herrero 1972) while promoting the sustainability of whitebark pine and maintaining existing core/remote habitat.

The terrestrial biological assessments states, all modeled den habitat will be maintained based on denning habitat features most often selected for by grizzly bears. Burning could potentially influence den site selection although there is no available science indicating canopy loss due to fire precludes use as denning habitat. For the combined subunits, approximately 71 percent of available denning habitat occurs within the wilderness and more than 97 percent of available denning habitat would remain unaffected by proposed treatments. In addition, no project activities would occur within suitable den habitat during the denning season; therefore, no impacts to denning bears are anticipated. Existing forested cover will be maintained on 96 and 99 percent of the Arrastra and Red Mountain sub-units respectively.

8. ***Incorporate the updated soils report into the final environmental impact statement and project record.***

   The Soils Report is included in the final environmental impact statement on pp. 586-618. This report is also in the project record in Section C where the specialist reports and supporting documents for the project are filed.

9. ***Clarify treatments in old growth outside third-order drainages, and add a project design feature for this treatment.***

   No designated old growth in 3rd-order drainages would have been treated under any alternative and will not be in the decision. Forest Plan direction regarding old growth will be met. Under alternative 2 outside of the 3rd-order drainages, three stands (42201139, 42201147, and 42201152) that may potentially be old growth would be prescribed burned; one stand that has been verified by a recent stand exam (41502089) would be prescribed burned, and one stand that has been verified by a recent stand exam (42303103) would be thinned and prescribed burned. Under alternative 3 outside of the 3rd-order drainages, one stand that has been verified by a recent stand exam (41502089) would be prescribe burned, and one stand that has been verified by a recent stand exam (42303103) would be partially thinned and the fuels burned.

   Stands proposed for treatment would be changed by the treatments, with species compositions “pushed” toward dominance by seral fire-tolerant conifers, and stand structures “pushed” to or toward open, but still multi-story, structures with relatively flat diameter distributions. Treated potential and verified old growth stands would still qualify as old growth following the treatments.

   Effects to designated old growth in the two 3rd-order drainage are the same under all alternatives because no activities are proposed in designated old growth in these drainages. Following the process described above, about five percent of each 3rd-order drainage is designated to manage as old growth. All old growth would continue to develop successionally under all alternatives. Single-story and two-story stands would become more multi-story. Closed canopies would remain closed, and open stands would become closed over time. Down woody fuels would continue to accumulate.

   About 68 percent of the designated old growth is Douglas-fir type. With continuing succession, more small trees would become established with the species composition trending toward subalpine fir (Fischer and Clayton 1983). These stands are susceptible to Douglas-fir beetle, western spruce budworm, and root disease. Arial Detection Survey data appears to indicate that Douglas-fir beetle has consistently declined in recent years, while western spruce budworm infestation was extensive in 2009, substantially less was recorded in 2010 (Amell and Klug 2015). Douglas-fir beetle tends to infest large and old Douglas-fir and heavily stocked stands. Their impacts can also be affected by weather conditions, for example droughts that reduce host tree vigor. With increasing stocking, tree size and age over time, we can expect Douglas-fir beetle to continue to impact the stands to some degree, increasing with the next droughty period. Since forests in the area, including the old growth stands, are progressing toward dominance by Douglas-fir and subalpine fir, we can expect the impacts of western spruce budworm to continue if not increase. Diseases would continue to impact stands at current levels.

   In the long term, dense forest conditions with multiple-layer stands and increasing surface fuels would support increasingly intense fire behavior and severe fire effects (Buhl 2015). Stand replacement fire would become more likely on the landscape and old growth stands more susceptible to the impacts.

In the project area outside 3rd-order drainages, stand data collected in 2010 indicate that there are two stands having old-growth characteristics within proposed Stonewall Vegetation Project units (Stand 41502089 is within Unit 2, Stand 42303130 is within Unit 46). Less recent stand exam data indicates that there are three stands that may potentially qualify as old growth (Stands 42201139, 42201147, and 42201152) in prescribed burn Unit 81. These stands are displayed in figure 57 as "Other Old Growth."

A mixed-severity prescribed burn which would create openings less than 30 acres in size is proposed for Unit 81. The three potential old growth stands are in the lower portion of the unit and within those stands the prescribed burn would be conducted as an underburn to minimize mortality in the large trees-see design features (appendix B).

Old Growth

As discussed and displayed above, no designated old growth in 3rd-order drainages would be treated under this project. Forest Plan direction regarding old growth would be met. Outside of the 3rd-order drainages, three stands (42201139, 42201147, and 42201152) that have old-growth characteristics would be prescribed burned; one stand that has been verified by a recent stand exam (41502089) would be prescribed burned, and one stand that has been verified by a recent stand exam (42303103) would be thinned and prescribed burned.

All of the stands proposed for treatment would be changed by the treatments, with species compositions "pushed" toward dominance by seral fire-tolerant conifers, and stand structures "pushed" to or toward open, but still multi-story, structures with relatively flat diameter distributions. Following treatments, these stands would still qualify as old growth.

A design feature for old growth have been added to appendix B of this decision. Specifically it states, "stands classified as old growth would be burned with a low-intensity fire to minimize mortality to trees greater than 17 inches diameter-at-breast-height and consumption of down woody material. Burn planning and implementation will be conducted in consultation with Timber/Silviculture" (WL-30) and is applied to units 2 and 46. Additionally, all harvest units will have no old growth treated (WL-31).

10. Provide additional analysis and supporting documentation for the blended alternative described in the draft record of decision.

Refer to appendix E which contains the supporting documentation for the decision, which contains the blended alternative.

The Stonewall Vegetation project decision is a blending of treatment units from both alternatives 2 and 3 in the final environmental impact statement. The identified resource documentation demonstrates that the decision is supported in the final environmental impact statement analysis, and where necessary, supplies additional analysis to support the decision.

Since the publishing of the final environmental impact statement and draft record of decision, two wildfires burned in and adjacent to the project area. The Sucker Creek Fire burned 110 acres in the project perimeter and 29 acres within treatment units. The Klondike Fire burned 550 acres in the project perimeter and 350 acres in treatment units. As a result of these wildfires, 1,027 acres of treatment were removed from the decision. All of these acres were from units considered for prescribed fire. With a lesser amount of prescribed fire in the project, a lower amount of impacts will result from the project for prescribed fuels and air quality. This decision is still in compliance with the Forest Plan and has been adequately analyzed in the final environmental impact statement. All resource specialists include the blended alternative and post-wildfire analysis in their documentation found in appendix E.

11. ***Provide rationale for using the 2-mile "very high" and "high" risk zones under the Tri-Country Wildfire Protection Plan as the Northern Rockies Lynx Management Direction exception boundary.***

    The boundary used for applying the Northern Rockies Lynx Management Direction exceptions consist of the entire wildland-urban interface. As recognized in the final environmental impact statement, the Tri-County Community Wildfire Protection Plan identities the wildland-urban interface as being comprised of four one-mile zones based upon proximity and the level of risk of wildland fire to the urban interface. The two-mile zone, including the very high and high risk zones, is referenced in the final environmental impact statement to provide context to where the majority of the harvest treatments occur in relation to potential lynx habitat within the Community Wildfire Protection Plan wildland-urban interface however, the Northern Rockies Lynx Management Direction exceptions were applied throughout the entire wildland-urban interface and not limited to the two mile zone of the wildland-urban interface. Additionally, the decision added two design features, WL-27 and WL-28, for lynx.

Alternatives Considered in Detail

Alternative 1-No Action

Under the no-action alternative, current management plans would continue to guide management of the project area. No timber removal, fuels reduction, or prescribed burning for forest restoration would be implemented to accomplish project goals.

Alternative 2-The Proposed Action

This alternative represented the proposed action from scoping. Mapping corrections resulted in slight adjustments in acre and mile figures from scoping. Alternative 2 *proposed a total of 8,564 acres of commercial and noncommercial treatments.* Harvest treatments (regeneration harvest, intermediate harvest, and pre-commercial thinning) were proposed on a total of 3,099 acres. Fuels treatments would follow timber removals, including slashing, pile burning, jackpot burning, and underburning. In addition to post-harvest burning, prescribed fire was proposed within the inventoried roadless areas to promote ecological restoration of a mix of vegetation composition and structure across the landscape. Prescribed fire was proposed on 4,182 acres (about 0.5 percent) within the Bear Marshall Scapegoat Swan Inventoried Roadless Area and on 664 acres (about 3.8 percent) within the Lincoln Gulch Inventoried Roadless Area. To help facilitate management, outside these inventoried roadless areas approximately 2.6 miles of road were to be built then obliterated immediately following timber removal.

Alternative 3–Draft Environmental Impact Statement Preferred

This alternative was developed to address issues raised during scoping regarding reducing potential impacts to habitat for threatened, endangered and sensitive species and designated critical habitat; management indicator species (MIS); big game hiding cover, thermal cover, and security cover. Treatments were reviewed and adjusted to reduce impacts to habitat.

Alternative 3 proposed a total of 6,564 acres of commercial and noncommercial treatments. Harvest treatments (regeneration harvest, intermediate harvest, and pre-commercial thinning) were proposed on a total of 2,298 acres. Fuels treatments would follow timber removals and include slashing, pile burning, jackpot burning, and underburning. In addition to post-harvest burning, prescribed fire is proposed within

the Bear Marshall Scapegoat Swan Inventoried Roadless Area to promote ecological restoration of a mix of vegetation composition and structure across the landscape. Prescribed fire was proposed on 3,565 acres (about 0.4 percent) within the Bear Marshall Scapegoat Swan Inventoried Roadless Area. The Lincoln Gulch Inventoried Roadless Area would not be treated. To help facilitate management, outside these inventoried roadless areas approximately 0.4 mile of road would be built then obliterated immediately following timber removal.

Alternatives Considered but Eliminated from Detailed Study

I also considered five other alternatives, including the original proposed actions, which were dismissed from detailed study for various reasons. For a detailed discussion of these alternatives, refer to chapter 2 in the final environmental impact statement.

Environmentally Preferred Alternative

The Council on Environmental Quality (CEQ) regulations direct the decision maker to identify the environmentally preferred alternative, which is defined as the alternative which best meets the goals of section 101 of the National Environmental Policy Act. Section 101 emphasizes protection of the environment while attaining the widest range of beneficial uses of the environment without degradation. This definition could be generalized to mean the alternative that best balances negative impacts with benefits.

Alternative 3 is the *environmentally preferred alternative* because it was developed to address issues raised during scoping regarding reducing potential impacts to habitat for threatened, endangered and sensitive species and designated critical habitat; management indicator species (MIS); big game hiding cover, thermal cover, and security cover. Treatments were reviewed and adjusted to reduce impacts to habitat.

Determination of Non-significant Forest Plan Amendment

Treatments proposed under this Decision will reduce elk hiding and thermal cover in both the Beaver Creek and Keep Cool Creek herd units, whereas the amount and distribution of forage will increase. Neither herd unit will meet Forest Plan standard 3 or 4a. This decision requires a site-specific, non-significant forest plan amendment for standards 3 and 4(a) for the reductions in elk hiding cover and thermal cover. The amendment is a site-specific amendment and is applicable only to implementation of the decision for the Stonewall Vegetation Project. This is a one-time exemption and is not intended to replace the existing standards.

This decision will amend the 1986 Helena National Forest Plan (Forest Plan) for lands encompassed by the Stonewall Vegetation Project. This site-specific amendment will exempt the Project from:

- Forestwide Standard 3 for hiding cover on summer range (USDA 1986 p. II/17) for the Beaver Creek and Keep Cool Creek elk herd units and thermal cover on winter range in the Beaver Creek herd unit;
- Forestwide Standard 4a for open road densities during the big game hunting season (USDA 1986, p. II/17-18) for the Beaver Creek and Keep Cool Creek elk herd units;
- Management Area T-2 standard for thermal cover on winter range (USDA 1986, p. III/35) within the management area;
- Management Area T-3 standard for hiding cover (USDA 1986, p. III/39) within the management area;

- Management Area T-2 and T-3 standards for hiding cover in timber harvest openings (USDA 1986, III/35 and III/39) within the management area with the project boundary.

The wildlife analysis for this project indicates that the existing condition for the Keep Cool Creek herd unit is below Forest Plan Standard 3 in terms of hiding cover and both herd units are below Forest Plan Standard 3 in terms of thermal cover. Both herd units are below Forest Plan Standard 4a. Note that the Klondike Fire further reduced hiding cover in both herd units and the Sucker Creek reduced hiding and thermal cover in the Keep Cool herd unit (appendix E).

The existing condition in Management Area T-2 is below the thermal cover standard for the area. In addition, there are several past harvest units in management areas T-2 and T-3 that do not currently provide hiding cover requirements of big game that are adjacent to proposed harvest units. The project will result in the removal of hiding and thermal cover that will move these elk herd units further away from consistency with Forest Plan Standard 3 and 4a for both elk herd units, will further reduce thermal cover in Management Area T-2, and will treat areas adjacent to past harvest that does not currently provide hiding cover. The information used in this amendment is based on the wildlife analysis completed for the Stonewall Vegetation Project Environmental Impact Statement and the supporting documentation for the Decision.

Table 3 summarizes the changes to hiding and thermal cover by management area due to the Sucker Creek and Klondike Fires and how the Decision affects those acres.

Table 3: Effects to hiding and thermal cover by management area in the Decision

Parameter		Existing Condition Post Fire	Decision
T-2 - Thermal Cover Acres (percent) on Winter Range[1] in the Project Area		251 (16 %)	145 (9 %)
[1]There are 1,559 acres of winter range in T-2 in the project area.			

Table 4 summarizes the effects to hiding cover in the Decision compared with the existing condition and post-Sucker Creek and Klondike Fires. Approximately 3,367 acres of hiding cover would be treated in the Decision in the Beaver Creek herd unit and 916 acres of hiding cover would be treated in the Keep Cool herd. Alternative 2 includes the treatment of 5,211 acres of hiding cover in the Beaver Creek herd unit and 2,208 in the Keep Cool herd unit. Alternative 3 includes the treatment of 3,898 acres of hiding cover in the Beaver Creek herd unit and 1,560 in the Keep Cool herd unit. While the alternatives 2 and 3 calculations are not directly comparable to the Decision due to hiding cover losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 4: Acres (percent) of remaining* elk hiding cover on summer range by elk herd unit in the existing condition and Decision and Forest Plan (FP) consistency

Parameter			Existing Condition Post Fire		Decision	
			Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Elk Hiding Cover acres (percent)			18,021 (56 %)	13,968 (32 %)	14,451 (45 %)	12,964 (29 %)
Meets Forest Plan Standard 3			Yes	No	No	No
*In order to qualify as Forest Plan elk hiding cover, patches of hiding cover must be at least 40 acres in size.						

Table 5 summarizes the effects to thermal cover in the Decision compared with the existing condition, post-Sucker Creek and Klondike Fires. Approximately 293 acres of thermal cover on winter range will be treated in the Decision in the Beaver Creek herd unit of which five acres will be treated with low severity prescribed fire. Approximately 104 acres of thermal cover on winter range will be treated in the Keep Cool herd unit none of which are low severity prescribed fire treatments.

Table 5: Acres (percent) of remaining* elk thermal cover on winter range by elk herd unit in the Decision and Forest Plan (FP) consistency

Parameter			Existing Condition Post Fire		Decision	
			Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Winter Range Thermal Cover acres (percent)			938 (5 %)	471 (3 %)	598 (3 %)	353 (3 %)
Meets Forest Plan Standard 3			No	No	No	No
*In order to qualify as Forest Plan elk thermal cover, patches of thermal cover must be at least 15 acres in size.						

Table 6 summarizes the effects to the hiding cover/open road density associated with the project for Standard 4a. The open-road density associated with the project would remain the same as the existing condition post-treatment. Approximately 0.9 miles of temporary road would be constructed in the Beaver Creek herd unit followed by full obliteration post-treatment in the Decision. An additional 9.6 miles of currently closed roads would also serve as haul routes in the Beaver Creek herd unit. Open road density during project implementation in the Beaver Creek herd unit would increase to 1.7 mi/mi^2. There is no road construction in the Keep Cool herd unit; nor are any closed roads being used for hauling. All temporary roads and currently closed roads used for hauling would remain closed to the public.

Table 6: Hiding cover and open road densities by herd unit in the existing condition (post-fire) and Decision

Parameter	Alternative 1		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Open Road Density mi/mi^2	1.4	1.3	1.4[1] (1.7)[2]	1.3[1] (1.3)[2]
Percent Hiding Cover (Post-Fire)	56%	32%	45%	29%
Meets Forest Plan Standard 4a	No	No	No	No

The amendment to exempt this project from Standards 3 and 4a, the thermal cover provision of management area T-2, and the opening provision of T-3 should have minimal effect on overall elk populations. While many factors contribute to elk numbers, exempting the project from these standards should not preclude the ability of Montana Fish, Wildlife and Parks to realize its elk objectives in hunting district 281. Exempting this project from Standards 3 and 4a, and hiding cover and thermal cover standards for management areas T-2 and T-3, should not affect the Forest's ability to realize the elk population potential established in the Forest Plan. Furthermore, this exemption should not preclude the Forest's ability to achieve the goals and objectives as outlined in the Forest Plan. The goal, to "maintain and improve the habitat over time to support big game and other wildlife species" (USDA 1986, p. II/1) is being achieved through the retention of hiding cover elsewhere throughout the project area. Our objective, - "management will emphasize…the maintenance or enhancement of elk habitat..." (USDA 1986, p. II/4) – is also being realized for the same reasons.

This project is designed to enhance and restore unique vegetation communities across the project area – western larch, whitebark pine and ponderosa pine. Western larch is unique to this landscape in the plan area. While whitebark pine and ponderosa pine do occur elsewhere in the plan area, whitebark pine is important here as a food source for grizzly bears in the Northern Continental Divide Ecosystem. Ponderosa pine in the project area represents one of the largest contiguous ponderosa pine forests west of the continental divide within the plan area. In light of these unique ecosystem components I have decided that the long term benefits to these forested communities outweigh the short term impacts associated with this site specific exemption.

Findings Related to Law, Regulation, and Policy

I have determined that my decision is consistent with the laws, regulations, and agency polices related to this project. The following summarizes findings related to by major environmental laws. Where applicable, compliance with laws, regulations, and policies are listed and addressed in various sections of the final environmental impact statement and project record (primarily in the "Regulatory Framework and Forest Plan Consistency" discussions within each resource section of chapter 3 of the final environmental impact statement).

National Forest management is guided by various laws, regulations, and policies that provide the framework for all levels of planning. The laws, regulations and policies relevant to this proposed project analysis are discussed in the individual specialist reports and include (but are not limited to):

The National Environmental Policy Act (NEPA)

National Environmental Policy Act requires Federal agencies to: (a) use a systematic interdisciplinary approach in planning and decision-making; (b) consider the environmental impact of proposed actions; (c) identify adverse environmental effects which cannot be avoided should the proposal be implemented; (d) consider alternatives to the proposed action; (e) consider the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and (f) identify any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. I find that the Stonewall Vegetation project analysis process and documentation is consistent with National Environmental Policy Act.

The National Forest Management Act (NFMA)

On April 9, 2012 the Department of Agriculture issued a final planning rule for National Forest System land management planning (2012 Rule) 77 FR 68 [21162-21276]). None of the requirements of the 2012 Rule apply to projects and activities on the Helena-Lewis & Clark National Forest, as the Helena Forest Plan was developed under a prior planning rule (36 CFR §219.17(c)). Furthermore, the 2012 Rule explains, "[The 2012 Rule] supersedes any prior planning regulation. No obligations remain from any prior planning regulation, except those that are specifically included in a unit's existing plan. Existing plans will remain in effect until revised" (36 CFR §219.17).

Consistency with Forest Plan Standards, Goals, and Objectives

The National Forest Management Act requires that projects and activities be consistent with the governing Forest Plan (16 USC 1604(i)). Although the Helena and Lewis and Clark National Forests administratively combined in December 2015, management of the lands formerly within the boundary of the Helena National Forest will continue to be guided by the direction found in the Helena Forest Plan until that Forest Plan is revised. This project tiers to the Helena National Forest Land and Resource Management Plan final environmental impact statement and record of decision (USDA Forest Service 1986). The Helena Forest Plan established management direction for the Helena National Forest. This management direction is achieved through the establishment of the Forest Plan goals and objectives, standards and guidelines, and management area goals and accompanying standards and guidelines.

This decision is consistent with the standards, goals, and objectives of the Helena Forest Plan. See appendix F for detailed Forest Plan Consistency documentation. This decision includes a site specific, non-significant forest plan amendment. The Stonewall Vegetation decision falls within the allowance found at 36 CFR 219.15(c)(4) Amend the plan contemporaneously of the project or activity so that the project or activity will be consistent with the plan as amended. The amendment within the Stonewall decision is limited to only to this decision's activities and is identified in the section titled "Determination of Non-significant Forest Plan Amendment" above, as well as, in appendix C, and in the final environmental impact statement pages 8-10, 525-548.

Other National Forest Management Act consistency requirements (findings)

1. **Suitability for Timber Production**

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

National Forest Management Act directs that no timber harvesting shall occur on lands classified as not suited for timber production pursuant to 36 CFR 219.14(a) except for salvage sales, sales necessary to protect multiple use values, or activities that meet other resource objectives on such lands if the Forest Plan establishes that such actions are appropriate [36 CFR 219.27(c)(1)]. All timber harvest will take place in land classified as suitable for timber harvest under the Helena Forest Plan (MA T-1, T-2, T-3, T-

4) with the exception of six acres in Unit 58 which is in management area M-1 (appendix J). All proposed treatments involving timber harvest are designed to meet the project purpose and need and are not designed for timber production other than salvage. Timber harvest may occur in management area M-1 where access exists. My decision is consistent with National Forest Management Act suitability direction.

2. Timber Harvest on National Forest Lands

All projects that involve timber harvest for any purpose must comply with four requirements found in 16 USC 1604 Sec.6 (g)(3)(E). I find that the prescribed treatments involving timber harvest shall only occur on lands where:

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

No soil, slope, or other watershed conditions will be irreversibly damaged. No system roads will be built during this project, so the project will not create any permanent impairment. This decision maintains organic matter, soil porosity, and topsoil through the use of best management practices, Soil and Water Conservation Practices, and design features. Localized and limited detrimental soil disturbance will occur on landings, skid trails, temporary roads, or where soils are intensely heated, for example under logs or around roots. Detrimental soil disturbances will be managed according to Region 1 Soil Quality Guidelines to ensure soil productivity is maintained in activity areas.

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

Each regeneration harvest treatment area has been field reviewed by a certified silviculturist and treatment designed to ensure that the stands can be adequately stocked following final harvest. Restocking will be through natural and artificial methods to levels established for each unit. As displayed in the final environmental impact statement, appendix G, Table 35, 3,842 acres of regeneration harvest are recorded to have taken place in the project area. Examination of past regeneration harvest units show that regeneration success in the project area is very good. Stocking criteria will be established for each unit based upon site conditions, treatment objectives, and Forest Plan direction and documented in silvicultural prescriptions developed for the project. Regeneration treatments will be monitored (FSM 2472.4) to access treatment success and if determined necessary, there will be additional corrective work if the units are not adequately proceeding toward desired stocking guidelines.

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

This Decision protects streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment through implementation of State of Montana Streamside Management Laws Best Management Practices, and project design features.

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

The harvesting systems for this decision were selected based on site-specific resource requirements and not primarily to generate the greatest dollar return or the greatest unit output of timber.

3. **Clearcutting and Even-aged Management**

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

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

Proposed regeneration treatments utilize clearcutting with reserve trees in nine units with severe mortality and few remaining live trees. Clearcutting has been determined to be the optimal method for regenerating these units to the desired seral species in order to meet the project purpose and need as documented in project records.

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

Refer to the Stonewall Vegetation final environmental impact statement and project file. Full interdisciplinary review has been completed for this project. All treatments meet a portion of the multiple use goals and objectives in the Helena Forest Plan for designated management areas.

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

Cutting units were designed to blend with the natural environment as much as possible and meet visual quality objectives.

d. *Cuts are carried out according to the maximum size limit required for areas to be cut during one harvest operation, provided, that such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm [FSM Region 1 supplement 2400-2001-2-2471.1, 16 USC 1604 Sec.6(g)(3)(F)(iv)]*:

My decision includes harvest units (1a, 39, 42, and 43) which will result in regeneration openings greater than 40 acres. Current direction specified that forest openings may not exceed 40 acres except, "*Where natural catastrophic events such as fire, windstorm, or insect and disease attacks have occurred, 40 acres may be exceeded without 60-day public review and Regional Forester approval, provided that the public is notified in advance and the environmental analysis supports the decision.*" These units have been catastrophically impacted by the mountain pine beetle. The units supported a mature lodgepole pine over-story that has been killed by the mountain pine beetle, with mortality estimated over 80 percent. Each treatment is supported by a diagnosis and a detailed prescription will be written by a certified silviculturist. Approval from the Regional Forester is not needed when openings are made in response to catastrophic insect-caused mortality (USDA 1986 II/23, FSM 2471.1). A map of regeneration harvest areas exceeding 40 acres is provided in appendix F of the final environmental impact statement. The Stonewall Vegetation Project draft environmental impact statement 45-day comment period served to notify the public and was sufficient in documenting the need for the unit size.

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

Documentation of the effects on other resources is contained in the Stonewall final environmental impact statement and project file. Protection of all resource values is maintained. All sites considered for treatment will use established harvest and fuel reduction methods. Resource protection measures (appendix B) and applicable best management practices will be sufficient to protect soil and water resources. As stated above, regeneration on past even-aged harvest units within the Stonewall Vegetation project area have successfully occurred. With this local history of successful regeneration and the planned silvicultural treatments, I am assured that treatments involving even-aged harvest in my decision alternative will be restocked within the required time frame.

4. **Stands of trees are harvested according to requirements for culmination of mean annual increment of growth [16 USC 1604(g)(3)(F)(v)]:**

Average culmination of mean annual increment for forests in the area ranges from 100 to 120 years (USDA 1986 appendix H). Trees in most of the suitable units are of an age where they probably had reached culmination of mean annual increment (appendix K), however, the question of culmination of mean annual increment of growth in these units has been rendered moot by the severe levels of mortality. The units are not proposed for treatment for timber production purposes, but to restore the forests, modify fire behavior, and capture economic value of timber and so the culmination of mean annual increment growth requirement will not apply as stated in this provision.

5. **Construction of temporary roadways in connection with timber contracts, and other permits or leases:**

The National Forest Management Act requires that the necessity of roads be documented and 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 1604 Sec.8]. National Forest Management Act also requires that "all roads are planned and designed to re-establish vegetation cover on the disturbed areas within a reasonable period of time, not exceed ten years…unless the road is determined necessary as a permanent addition to the National Forest Transportation System" [16 USC 1604 Sec.8]. In order to access treatment areas, I have decided to construct 0.9 miles of temporary road. This project will construct no long-term specified roads. Temporary roads are needed to access the vegetation treatments and then will be reclaimed after use and will be revegetated within ten years. Based on these actions and analysis, I believe the decision alternative meets the intent of this National Forest Management Act roads requirement.

6. **Standards of roadway construction:**

My decision includes 0.9 miles of temporary roads which will be constructed on National Forest System lands and will be designed to standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources (16 USC 1608(c)).

7. **Diversity of Animal Communities**

This decision is consistent with National Forest Management Act requirements to provide for a diversity of animal communities (16 USC 1604((g)(3)(B)); also see 36 CFR 219.10(b): and FSM 2670.12.

The Endangered Species Act (16 U.S.C. 1531 et. seq.)

Under provisions of this Act, Federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions are not likely to jeopardize the continued existence of any of these species. The U.S. Fish and Wildlife Service provided a species list which required evaluating for the project. Pursuant to Section 7 of the Act, my staff prepared biological assessments, which disclose effects of the project on listed species, and consulted with the U.S. Fish and Wildlife Service regarding our findings. A biological opinion for terrestrial and fisheries species was received on August 24, 2016. The effects determinations for threatened and endangered species are found in appendix A.

The U.S. Fish and Wildlife Service concurred with our determinations that the project ***May Affect, Likely to Adversely Affect*** Canada lynx and Canada lynx critical habitat.

The U.S. Fish and Wildlife Service concurred with our determination of ***May Affect, Likely to Adversely Affect*** for grizzly bears.

The U.S. Fish and Wildlife Service concurred with our determinations of ***May Affect, Likely to Adversely Affect*** for bull trout and bull trout critical habitat in the Blackfoot River Section 7 Watershed and the Blackfoot Core Recovery Area.

The project will have no effect on any other listed species. My decision complies with the Endangered Species Act.

U.S. Fish and Wildlife Service biological opinion incidental take statement and terms and conditions are included as appendix G to this decision.

Bald and Golden Eagle Management Act

This decision complies with the Bald and Golden Eagle Management Act and is consistent with direction provided in the 2007 National Bald Eagle Management Guidelines (USDI Fish and Wildlife Service 2007) (final environmental impact statement page 462).

The Migratory Bird Treaty Act, Presidential Executive Order 13186 10

On January 10, 2001, President Clinton signed an Executive Order outlining responsibilities of federal agencies to protect migratory birds. Upon review of the information in the Wildlife report filed in the project file, I find that the decision alternative complies with this Executive Order.

Clean Air Act and Montana Clean Air Act (MCAA)

The purpose of the act is to protect and enhance air quality while ensuring the protection of public health and welfare. The 1970 amendments established National Ambient Air Quality Standards, which must be met by most state and federal agencies, including the Forest Service. States are given the primary responsibility for air quality management. Section 110 of the Clean Air Act requires states to develop State Implementation Plans that identify how the state will attain and maintain National Ambient Air Quality Standards.

The Montana Clean Air Act promulgates the State Implementation Plan and created the Montana Air Quality Bureau (now under the Montana Department of Environmental Quality). The Clean Air Act also allows states, and some counties, to adopt unique permitting procedures and to apply more stringent standards.

All prescribed burning will be implemented in full compliance with Montana Department of Environmental Quality air program with coordination through the Montana/Idaho Airshed Group. This decision will meet Forest Plan Standards for air quality by following coordination requirements. The project complies with the Federal Clean Air Act.

The Federal Clean Water Act (CWA)

This required each state to develop its own water quality standards, subject to the approval of the Environmental Protection Agency. Section 303(d) of the Clean Water Act required each state to assess all water bodies within its borders in order to identify water quality impairments that exceeded state standards. Under the Clean Water Act, water bodies identified as impaired generally require the development of a “Total Maximum Daily Load” (TMDL—a water quality restoration plan). The state is required to systematically develop these plans in collaboration with the Environmental Protection Agency. A water body’s status on Montana’s 303(d) list dictates, to a certain extent, the water quality standards under state law. Points of sediment delivery to “waters of the U.S.” from haul roads may require

National Pollutant Discharge Elimination System discharge permits prior to hauling. A total maximum daily load and water quality restoration plan for the Blackfoot River was completed in 2004.

Upon review of the Stonewall Vegetation final environmental impact statement, I find that activities associated with my decision alternative will comply with applicable Clean Water Act and Montana State Water Quality standards through application of best management practices. Prior to implementation, all necessary permits will be acquired. Roads associated with timber harvest are not considered by the Environmental Protection Agency to produce pollutant discharges that require point-source discharge permits because they do not come from industrial sources nor do they result from manufacturing, processing, or raw materials storage areas at an industrial plant. 40 CFR §122.26(b)(14).

National Historic Preservation Act, Section 106, Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act

These Acts provide direction for Federal agencies to establish a program for preservation of historic properties. In compliance with these acts, a review was conducted to determine if cultural resources surveys had been conducted with in the project area, and if cultural resources sites had been record. Potential impacts to sites eligible for the National Register of Historic Places, as well as for those not yet evaluated, were considered in this analysis. In accord with 36 CFR 800, Protection of Historic Properties, it is the policy of the Forest Service to protect those sites determined National Register of Historic Places eligible, as well as those sites not yet formally evaluated. The result of the Heritage Resource analysis conducted is in the specialist report in the project record (Nolan 2012). Consultation with the State Historic Preservation Office was completed on July 15, 2015 with the State Historic Preservation Office concurring with the determination of No Adverse Effect to Historic Properties with the condition that the project follow protection measures identified in Table 6 of the Stonewall Vegetation Project, R201301120039B, Section 106 Compliance Report (Project Record C-67). Those protection measures have been incorporated into my decision in appendix B, ARCH 1 – ARCH 13. I have determined I my decision is complaint with these acts.

Roadless Area Conservation Rule

On January 21, 2001 the 2001 Roadless Area Conservation Rule (Roadless Rule) was established (36 CFR 294 Subpart B) to provide, within the context of multiple use management, lasting protection for inventoried roadless areas within the National Forest System. The 2001 Rule prohibited road construction, road reconstruction, and timber cutting, sale and removal in inventoried roadless areas with some exceptions.

The Stonewall Vegetation Project analyzed effects to both the Lincoln Gulch and Bob Marshall Scapegoat Swan Inventoried Roadless Areas. No project activities are within the Lincoln Gulch Inventoried Roadless Area. Within the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area my decision includes 2,143 acres of hand treatment timber cutting. My decision contains no road construction or reconstruction in either the Lincoln Gulch or Bear-Marshall-Scapegoat-Swan Inventoried Roadless Areas.

The Roadless Rule Exception being applied to my decision is (§ 294.13 (b)(1)(ii))-§ 294.13 Prohibition on timber cutting, sale, or removal in inventoried roadless areas, <u>except</u>*:*

(1) the cutting, sale, or removal of generally small diameter timber is needed for one of the following purposes and will maintain or improve one or more of the roadless area characteristics as defined in § 294.11.

> *(b) Notwithstanding the prohibition in paragraph (a) of this section, timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following*

circumstances exists. The cutting, sale, or removal of timber in these areas is expected to be infrequent.

> *(ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.*

All treatment units in the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area have variable average diameter-at-breast-height and tree species diversity. Treatments will generally consist of small trees and shrubs below the average diameter-at-breast-height for the stands. The inventoried roadless area report for this project documents that Natural and Undeveloped Roadless Area characteristics will be maintained and enhanced by the project.

I have reviewed the project with Deputy Regional Forest Dave Schmid. He has concurred that the actions within the inventoried roadless area meet the 2001 Roadless Rule exception and that the Forest complied with the review requirements outlined in the May 31, 2012 letter from the Chief. Dave Schmid has delegated to me the authority to sign this decision.

Environmental Justice Act

Executive Order 12898 directs federal agencies to identify and address the issue of environmental justice: adverse human health and environmental effects that disproportionately impact minority and low-income populations.

No local minority or low-income populations were identified in the Stonewall Vegetation Project analysis area during project analysis. The Decision will have no adverse effects to human health and safety, or environmental effects to minority or low-income populations.

Other Considerations

Best Available Science

I am confident the analysis of this project was conducted using the best available science. My conclusion is based on a review of the record that shows my staff conducted a thorough review of relevant scientific information, considered responsible opposing views, and acknowledged incomplete or unavailable information, scientific uncertainty, and risk. Please refer to the resource analysis section in chapter 3 of the final environmental impact statement for specific discussions of the science and methods used for analysis and for literature reviewed and referenced.

Administrative Review Process

This decision is subject to the objection process pursuant to 36 CFR 218. The 45-day objection file period for the draft record of decision ended on June 14, 2015. The Objection Reviewing Officer has responded in writing to all objections, and all concerns and instructions identified by the Reviewing Officer in the objection response have been addressed. All requirements under 36 CFR 218 have been met, and the objection process is complete.

Implementation

This project will be implemented in accordance with Forest Service Manual and Handbook direction for Timber Sale Project Implementation in FSM 241.3 and FSH 2409.24. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, design criteria and mitigation approved by this decision and compliance with other laws.

Implementation will likely begin in the fall of 2016 and continue through the year 2025.

It should be noted that I have directed my staff to look for opportunities to offer two timber sale contracts to accomplish harvest treatments identified in this record of decision. I will consider using revenue from the sale of National Forest timber to finance projects identified under the authorization of the Knutson-Vandenberg (K-V) Act of 1930 (16 U.S.C. 576 – 576b; 46 Stat. 527) as amended by the National Forest Management Act of October 22, 1976 (16 U.S.C. 1600 et seq.) Only projects within the timber sale area and meet specification in Forest Service Handbook 2409.19 can qualify for Knutson-Vandenberg funding.

Several potential funding opportunities were identified by the interdisciplinary team, included in this decision and are listed below in general order of priority:

- Post-harvest reforestation exams for essential reforestation (1st, 3rd, and 5th year) will be scheduled to determine reforestation progress, establishment, and certification.
- Site preparation burns (where specified and necessary) will be conducted as soon as possible after harvest to create suitable conditions for prompt natural regeneration.
- Planting of whitebark pine seedlings, if stock is available, will be done in the whitebark pine restoration units to augment natural regeneration and achieve species composition goals.
- Prescribed fire treatments (including broadcast burning, under-burning, pile burning, hand slashing, and/or hand piling) will be done to achieve desired reductions of natural fuels and achieve other ecosystem objectives as specified in prescriptions.
- Noxious weed inventory and control treatments will be scheduled pre-and post-treatment as needed within the project area and along travel corridors.
- Road work (de-commissioning, re-contouring, placing into storage, and/or construction).

Contact Person

For additional information contact Lincoln District Ranger Michael Stansberry, 1569 Highway 200, Lincoln, MT 59639 406-362-7000.

Appendix A: Threatened, Endangered, Proposed and Sensitive Species determinations for the Decision

Table 7: Threatened, Endangered, Proposed and Sensitive Species determinations for the Decision.

Species	Decision
Threatened, Endangered, Proposed Species-Wildlife	
Grizzly Bear	LAA
Canada Lynx	LAA
Canada Lynx Critical Habitat	LAA
Wolverine	NLJCE
Sensitive and Federal Candidate Species-Wildlife	
Gray Wolf	MIIH
Fisher	MIIH
Townsend's Big-eared Bat	MIIH
Bald Eagle	MIIH
Black-backed Woodpecker	MIIH
Flammulated Owl	MIIH
Western Toad	MIIH
Sensitive and Federal Candidate Species-Plants	
Roundleaf orchid	MIIH
Scalloped moonwort	MIIH
Peculiar moonwort	MIIH
Lesser yellow lady's slipper	MIIH
Sparrow egg lady's slipper	MIIH
Howell's gumweed	MIIH
Hall's rush	MIIH
Missoula phlox	MIIH
Whitebark pine	MIIH
Threatened and Endangered Species-Fish	
bull trout	LAA
bull trout critical habitat	LAA
Sensitive and Federal Candidate Species-Fish	
Westslope cutthroat trout	MIIH
western pearlshell mussel	MIIH
Threatened and endangered Species Determinations: **NE**: No Effect; **NLAA**: May Affect, Not Likely to Adversely Affect; **LAA:** May Affect, Likely to Adversely Affect, **NLJCE** – not likely to jeopardize the continued existence. Sensitive Species Determinations: **NI**: No Impact; **MIIH**: May Impact Individuals or habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species.	

Note: there are no threatened or endangered **plant** species known on the Helena National Forest.

Appendix B: Project Design Features, Best Management Practices, Mitigation and Monitoring Plan for the Decision

The Forest Service developed the following mitigation measures and project design features that apply to this decision.

Table 8: Project design features, best management practices and mitigation

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
AIR-	**Air Quality Design Feature**	
AIR-1	Prescribed burning would be implemented in full compliance with the Montana Department of Environmental Quality air program with coordination through the Montana/Idaho Airshed Group and reported to the Airshed Coordinator during active burning periods.	All burn units
AIR-2	Burning would be dependent upon site conditions and weather conditions. Notice of the pile and prescribed burning timeframes, or burn windows, would be shared with the public through paper notices and announcements on the Forest website.	All burn units
ARCH-	**Archaeology Design Feature**	
ARCH-1	All activities would be required to protect ditches during harvest activities. In mechanical (tractor) units, tractor crossings shall be spaced no less than 100 feet apart and placed at a 90 degree angle to the ditch. Established crossings would be required to place logs or other acceptable means/material (rubber mats, plastic culvert, etc.) within the ditch to armor and protect the shape and integrity of ditch during felling, tractor skidding, and skyline inhaul yarding operations. Ditch armoring method is subject to approval. All timber designated for removal, which are adjacent to a ditch, shall be felled parallel (not across) the ditch to avoid damage to the ditch. Any damage would be required to be repaired to ditches that occurred during implementation.	Units 16, 17a, 17b, 18, 19, 20, 21, 39, 42, 43, 44, 47, 48, 51a, 72, and 78
ARCH-2	Understory and ladder fuels should be removed from under the tree canopy. Surface duff (needle-cast, sawdust, etc.) and soil organics can be raked away from under the dripline, but should NOT be stripped down to mineral soil. Trees can be protected with cabin wrap or sprinklers to keep sparks/embers from catching on the scar. Directional felling of trees in the vicinity of CMTs and/or buffer zone of 1.5 tree lengths.	Units 1a, 3, and 47

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
ARCH-3	No ground based mechanical equipment operations within site boundary. Avoid piling on cultural resource features (e.g. can dumps, foundations remains, ditches, root cellar depressions, prospect pits).	Unit 1a
ARCH-4	No ground based mechanical equipment operation within site boundary. The use of chainsaws only to modify fuels to the extent needed to implement low-intensity burning activities. Hand pile locations will need Forest Archaeologist approval to avoid historic foundations, trash piles and/or known subsurface deposits.	Units 11, 12a, 13a, 14, 16, 17a and 78
ARCH-5	No mechanical equipment operations within the two acre site boundary. Avoid piling on cultural resource features (e.g. can dumps, foundations remains, ditches, root cellar depressions, prospect pits).	On the boundary of units 47 and 48
ARCH-6	Apply streamside management zone buffer (50 feet) to avoid site.	Unit 48
ARCH-7	Create a 30 meter buffer around site with flagging tape for avoidance. No treatment activities within site buffer.	Unit 48
ARCH-8	No mechanical equipment within a 10 meter buffer around this trench for safety reasons.	Unit 17a
ARCH-9	Known heritage resources would be flagged and buffered for avoidance.	Units 1a, 3, 4, 11, 12a, 12b, 13a, 13b, 14, 16, 17a, 17b, 46, 47, 48, 49, 51a, 70, 72 and 78
ARCH-10	Apply INFISH riparian habitat conservation area buffers (300 feet from perennial fish bearing streams, 150 feet from perennial non-fish bearing streams, 100 feet from intermittent streams. The boundaries of all riparian habitat conservation area's will be flagged PRIOR TO on the ground activities. Ground-based equipment is excluded from all riparian habitat conservation areas buffers.	All treatment units
ARCH-11	Temporary road construction will need to avoid impacting ditch during construction. Temporary roads will not be allowed to cross ditch.	Roads #4 and 6
ARCH-12	Avoid flagged sites during route reconstruction.	Road #'s 1824-A1, 626, 626-A1, 626-B1, 4043, 607-C1, 607-E1 and 626-A1
ARCH-13	If additional cultural resources are discovered during implementation of this project, work would cease in the area and a Forest Service archaeologist would be contacted. Work in the area would only resume if mitigation measures are determined or re-evaluated if necessary.	All units
BOT-	**Botany Design Feature**	
BOT-1	If sensitive plant populations except whitebark pine (see SILV-2), are located within the project area, appropriate	All units

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	mitigation (e.g., site avoidance, avoid concentration of fuels on sites to be burned) would be followed upon consultation with a Forest Service botanist.	
FUEL-	**Fire Fuels Design Feature**	
FUEL-1	Prior to burning slash piles, logging areas may be open to public firewood gathering after the sale is closed, if wood is available. Other resource values, such as wildlife snags, down logs, and soils, would be protected. Notify the public of firewood opportunities after timber removal activities are completed.	Harvest units along existing open roads, as available
FUEL-2	Prescribed burning control lines would be constructed as needed for holding actions or to protect resource area concerns. This includes black line, fireline, pruning, saw line and hose lays. Existing roads, trails, creek drainages, wet meadows, rocky outcrops and other natural barriers would be used as control lines where possible.	All burn units
FUEL-3	Rehabilitate the appearance of fire lines and skid trails adjacent to or that intersect existing roads and trails to reduce the potential for unauthorized motorized use.	All burn units
FUEL-4	Burning would take place under the guidelines set forth in a prescribed fire burn plan developed specifically for this project area. Prescribed burn plans address parameters for weather, air quality, and contingency resources.	All burn units
FUEL-5	Hand piling and pile burning of natural and activity fuels may occur in portions of units adjacent to private land to reduce fuel loading levels prior to jackpot and underburning.	Units 1a, 2, 3, 4, 5, 7, 8, 10, 11, 12a, 12b, 47, 49, 51a and 73
FUEL-6	Reduce fuel loading of coarse woody debris (greater than three inches diameter) to approximately 10 tons per acre, where possible.	Unit 88
FUEL-7	Reduce fuel loading of coarse woody debris to 10 to15 tons per acre.	Unit 78
FUEL-8	Slash understory fuels using chainsaws where needed to create burnable fuel bed.	Units 77, 78, 79, 79a, 80a, 82, 83, 84, 85, 87 and 88
NOX-	**Noxious Weed Design Feature**	
NOX-1	Incorporate all relevant guidance from FSM 2900 and the Environmental Protection Measures from the Helena National Forest Weed final environmental impact statement Record of Decision.	All treatment units
NOX-2	Landings, skid trails or other activity areas (e.g., hand lines, control lines, burn piles) that have over 30 percent ground cover removal/soil surface disturbance, due to the activity, would be rehabilitated and seeded with a prescribed native seed mixture as soon as appropriate following the cessation of activities. Where slopes are under 15 percent, surfaces would be left rough to provide micro-topography for seed and water catchment. Woody debris would be spread on the surface at a rate of one to five tons per acre in these areas	Timber harvest units 1a, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12b, 14, 18, 21, 47, 49, 51a and 73

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	to provide site stability as well as additional microsites. Where slopes are over 15 to 20 percent, surfaces would be left rough to provide micro-topography for seed and water catchment. Woody debris would be spread on the surface at a rate of five to 10 tons per acre in these areas to provide site stability as well as additional microsites.	
NOX-3	Use Forest recommended certified native seed mixtures (weed-free seed)[1] where appropriate.	All treatment units except where underburning for restoration is completed
NOX-4	Where feasible for restoration of disturbed ground (e.g., hand lines, control lines, burn piles), cover bare soils with a thin layer of duff from adjacent sites, if available. It is important to leave some duff on adjacent sites where cover material is collected.	In units identified for pile burning throughout the project area: Units 3, 4, 9, 18 and 21 In addition, this applies to portions of the following units where pile burning is proposed along the Forest boundary: Units 1a, 2, 4, 5, 7, 8, 10, 11, 12a, 12b, 47, 49, 51a and 73
NOX-5	The portions of the haul route that require road work (e.g., reconditioning, maintenance, construction) prior to haul should be treated with herbicides prior to the reconditioning early in the growing season to prevent seed set, and again in the fall following reconditioning to limit the effect of the ground disturbance.	Roads proposed for work
NOX-6	A 100-foot buffer around any sensitive plant species would be required when herbicides are applied. Within this buffer only hand pulling of weeds would be allowed[2].	All treatment units
NOX-7	To the extent possible, considering other resource concerns, minimize the potential for spread of noxious weeds by conducting harvest activities under winter conditions. Specific mitigation for treatment units describes additional benefits from frozen ground operations. Past studies have shown a substantial decrease in soil surface disturbance resulting from logging when the activity occurs on frozen ground (McIver and Starr 2000). Limited ground disturbance would result in lower risk of increased weed infestations.	All units
NOX-8	Before moving into the project area, all equipment would be inspected and any mud, soil and plant parts would be removed. Cleaning must occur off National Forest System lands. This would not apply to service vehicles that stay on	All treatment units

[1] Recommended certified weed-free seed mixtures are located in Appendix F of the Helena National Forest Plan.

[2] Environmental Protection Measure #22 from the Helena National Forest Noxious Weed final environmental impact statement and Record of Decision 2006

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	the roadway and travel frequently in and out of the project area.	
RNG-	**Range Design Feature**	
RNG-1	Protect existing livestock management fencing, or repair if damaged during operations.	All units where needed
RNG-2	Fencing, temporary herding, or other techniques may be used to protect conifer regeneration where needed.	All treatment units, where needed
RNG-3	Fence construction may be needed along allotment boundaries that would have natural barriers removed due to the project. This would primarily be of concern along the Stonewall allotment boundary on the west and east boundaries. Design all improvements for livestock management, such as fencing and water developments, in cooperation with a wildlife biologist.	All treatment units, where needed
REC-	**Recreation and Roadless Design Feature**	
REC-1	Minimize project activities during the first two weeks of the General Big Game Hunting rifle season.	All treatment units
REC-2	No hauling on weekends and major holidays to minimize conflicts with the public users unless approved by the District Ranger.	All treatment units
REC-3	Coordinate project implementation with recreation staff, Forest Public Affairs Officer and Law Enforcement to ensure the public is well informed of treatment schedules and potential impacts. Provide public notifications at of project activities (e.g., logging, hauling, prescribed burning) at major access roads, in local newspapers and on the Forest webpage.	All treatment units
REC-4	Work with local snowmobile groups and Forest Service biologist to identify alternative groomed snowmobile routes where winter operations are considered. Snowmobile trails are groomed from December 1 through April 1[3].	All treatment units
RDS-	**Roads Design Feature**	
RDS-1	Roads would be maintained in accordance with direction provided in FSH 7709.15 (Transportation System Maintenance Handbook) and would be at a level commensurate with the need for the following operational objectives; resource protection, road investment protection, user safety, user comfort, and travel efficiency.	Roads proposed for work
RDS-2	Remove danger trees, approximately one and one-half tree lengths from the roadway, as needed, along roads used for hauling and project implementation.	Roads proposed for work

[3]Alternative routes may be a groomed path along the side of a haul route that would be safe for snowmobiles, or allowing the user group to groom an approved "detour" type route along existing roads to provide trail connections or loop riding opportunities that may have otherwise been impacted by hauling activity.

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
RDS-3	Roads that would be built then obliterated immediately following timber removal and road reconstruction would be the minimum density, cost, and standard necessary for the intended need, user safety, and resource protection.	Roads proposed for work
RDS-4	Currently closed roads, and roads built then obliterated immediately following timber removal, would be closed (e.g., gates, barricades) during operations to limit use to administrative use only.	Roads proposed for work
RDS-5	Upon project completion, roads built then obliterated immediately following timber removal would be decommissioned and rehabilitated. Intersections with roads would be blocked by rocks, wood, or berms and would be slashed in and or ripped and covered with slash or seeded within site distance of open roads to reduce potential for use after the project harvest activities are completed.	Roads proposed for work
RDS-6	Provide warning and other signing in accordance with Forest Service signing standards, and restrict or temporarily close roads in active project areas to provide for public safety.	Roads proposed for work
RDS-7	A wetting agent (water or other dust-reduction material) would be applied as needed to decrease or eliminate dust generated from timber hauling on aggregate and native surface roads to provide for air quality and public safety.	Roads proposed for work.
RDS-8	Road design would be addressed in clauses in the contract package. At a minimum, the following items would be included in the design considerations: location, width, drainage, stream crossings, closures, decommissioning and rehabilitation.	All treatment units
RDS-9	Existing open routes would be left in similar condition and drainage structures shall be left in functional condition.	Roads proposed for use
RDS-10	For roads built then obliterated immediately following timber removal that cross a drainage, associated temporary structures and fills shall also be removed to the extent necessary to permit normal maximum flow of water and stream crossings restored to their original dimensions and contours.	Road #5 between units 10 and 11
SILV	**Silviculture Design Feature**	
SILV-1 Aspen	Conifers suppressing aspen clones would be thinned from within and around suppressed aspen. Cut-tree diameter limits and cutting distance from aspen would be established and defined in stand and unit prescriptions.	Units 3, 4, 6, 7, 14, 16, 18, 21, 23, 24, 28, 44, 45, 46, 47, 48, 49, 50, 51a, 59, 62, 63, 66, 67, 68, 69, 70, 71, 72, 73 and 75
SILV-2 Whitebark pine	Assess low- and mixed-severity prescribed burning units containing groups or stands of whitebark pine to determine if areas need pre-burn treatments to protect whitebark pine from damage during burning. If needed, pre-burn treatments should take place a year prior to the proposed landscape burning. The pre-burn treatments could include cutting and directional felling of	Units: 79, 79a, 80a, 82, 83, 84, 85 and 88

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	conifer trees to increase fuel loadings, improve continuity of the fuelbed, and reduce fuel loads around whitebark pine trees. Created openings designed to serve as nutcracker caching sites should be cut as near-circular areas one to five acres around mature whitebark pine trees. Concentrated pockets of advanced regeneration will be avoided during ignition, to be addressed in the Burn Plan. These unburned areas will be evaluated for potential release of whitebark pine following treatment. It is recognized that some seedlings and saplings will likely be killed by surface fires, and to identify and protect all of them over large acreages would be impractical. Additionally, the resistance of these understory whitebark pine to blister rust is unknown, as is their ability to release following thinning of the understory (Keane and Parsons 2010). New seedlings originating from surviving, seed producing mature whitebark pine, with presumably a higher resistance to blister rust (Keane and Parsons 2010), and planting of known resistant seedlings will result in stands with greater resistance to this disease.	
SILV-3	Where the opportunity exists in prescribed burning units where pre-burning tree cutting is proposed, thinned areas should be located around large ponderosa pine, Douglas-fir, western larch and aspen to protect the trees and to promote the regeneration of those species.	Units 78, 79, 79a, 80a, 82, 83, 84, 85, 87 and 88
SILV-4	Merchantable dead trees would be removed except as needed to meet other resource criteria.	Units 4, 5, and all regeneration and commercial thinning units
SILV-5 Whitebark pine	The Forest Service will conduct silvicultural reconnaissance of whitebark pine habitat post burn treatments to assess impacts and natural regeneration success. To the extent that funding and rust-resistant stock is available, the Forest Service will seek opportunities to plant whitebark pine in suitable habitat areas.	Units 79, 79a, 80a, 82, 83, 84, 85, 87 and 88
S/WS/F-	**Soils, Watershed and Fisheries Design Feature**	
S/WS/F-1	Maintain adequate soil cover following management treatments to reduce the risk of erosion. As a rough guideline, maintain at least 50 percent soil cover on slopes less than 35 percent, and more than 50 percent soil cover on steeper slopes. Soil cover includes vegetation, plant litter and duff, rocks (greater than two inches diameter), and woody material.	All treatment units
S/WS/F-2	Conduct vegetation management activities using partial- or full-suspension yarding methods (i.e., skyline cable yarding).	Skyline Units

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
S/WS/F-3	For vegetation management activities in forested ecosystems, retain five to 20 tons per acre of coarse woody material (greater than three inches diameter) for warm, dry types, and 10 to 20 tons per acre for other types following vegetation treatments[4]. The purpose of this best management practices is to sustain long-term soil nutrient cycling.	Five to 20 tons per acre coarse woody material for Units: 2, 6, 7, 16, 44, 50, 73, 75, 78, 80a, 84 and 85 (Balance of units 10 to 20 tons per acre coarse woody material)
S/WS/F-4	Re-use existing skid trails where practical. Before use, skid trail locations would be approved by Forest Service personnel.	All treatment units
S/WS/F-5	Harvesting and skidding operations would be limited to time periods when dry soil conditions exist (summer operating period); or during winter conditions on lands outside of big game winter range to minimize detrimental soil effects in wet areas that are sensitive to rutting and compaction, and in areas where there is concern for soil cumulative effects. Winter conditions are defined as, "…when there is at least four-inches of frozen ground or six-inches of packed snow" (USDA Forest Service 1988; BMP 13.06 and 14.04).	All treatment units
S/WS/F-6	For prescribed fire management activities in the timber removal treatment areas, design burn prescriptions to burn when soil and duff moistures are high[5].	All treatment units
S/WS/F-7	Soil disturbance in units will be evaluated following harvest activities to determine if burning after harvest, as proposed, can be implemented and remain within Region 1 Soil Quality Standards. If it is determined that burning will exceed soil quality standards, then burn prescriptions will be adjusted so activities remain within standards. If burning prescriptions cannot be changed, then burning will be delayed until adequate soil recovery has occurred and soil quality standards are met.	Units: 1a, 4, 5, 9, 10, 11, 12b, 13b, 17b, 19, 20, 21, 28, 40, 42, 43, 45, 46, 47, 49, 57 and 58
S/WS/F-8	Skid trails would be designated with an average spacing of 100 feet.	All tractor units
S/WS/F-9	Following harvesting and skidding operations that result in the removal or displacement of litter, duff, soil, or coarse woody debris from the skid trail surface, the following activities would be conducted: • Litter, duff, soil, and woody debris displaced from the trail would be placed on the skid trail. • Slash and coarse woody debris that is placed on the skid trail would be compacted so that it is in contact with the soil surface.	All treatment units

[4] Graham et al. 1994; Brown et al. 2003

[5] Proposed prescribed burns are designed to maintain some duff on the forest floor.

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	• Slash placed on skid trails would be placed over 65 to 70 percent of the skid trail surface, except within the viewshed at the approaches of routes that are open to motorized use a cover of 85 to 90 percent would be placed. Slash would be varied size classes of both fine and coarse woody debris.	
S/WS/F-10	Landings would be de-compacted and/or scarified as part of site preparation. Mulch and fine debris from on-site would be spread over the landing. Grass or trees would be seeded or planted on the disturbed site. Slash would be placed over 65 to 70 percent of the landing surface; except within the viewshed of routes open to motorized use a cover of 85-90 percent would be placed. Slash would be of varied size classes of both fine and coarse woody debris. Slash would be compacted so that it is in direct contract with the soil surface.	All treatment units
S/WS/F-11	Where practicable, slash would be piled and burned in areas where detrimental soil disturbance already exists (i.e., abandoned log landings, skid trails, and roads associated with past activity). Handpiles would be constructed so they are no larger than approximately six feet in diameter and four feet high. Prior to hand piling, slash would be left through one winter after cutting to allow for initial decomposition and nutrient leaching. (Exception: units adjacent to private land or those identified in the silviculture prescription with insect concerns may be piled and burned as soon as possible to reduce fire hazard).	All treatment units
S/WS/F-12	Where practical, burn pile footprints would be covered with on-site mulch, fine debris, and slash. Burn pile footprints would be seeded or planted with the appropriate grass or tree species.	All treatment units
S/WS/F-13	In skyline corridors, place on-site mulch, fine debris and slash. Also seed or plant with the appropriate grass or tree species.	Units requiring restoration: Unit 53
S/WS/F -15	Installation, removal or replacement of culverts would be restricted to periods when stream channels are dry; or would be avoided from May 1 to August 1 to reduce the risk of affecting cutthroat trout eggs in stream gravels.	As needed
S/WS/F -16 riparian habitat conservation areas	INFISH (USDA 1995) riparian habitat conservation areas will be maintained in all units and marked. Where dead trees in riparian habitat conservation areas are determined to be a hazard, they will be felled and left onsite. A clear means of identifying hazard trees that are to be cut and left on site will be recognized and coordinated with wildlife staff. The	See, riparian habitat conservation area map with INFISH buffers

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	portions of dead hazard trees cut that are not blocking roads will not be removed from the riparian habitat conservation areas. No green commercial trees within the riparian habitat conservation areas will be removed. No pre-commercial thinning will occur within riparian habitat conservation areas. In burn units, no ignition will occur within riparian habitat conservation areas. Efforts will be taken to restrict fire from backing into riparian habitat conservation areas. No log landings will be located in riparian habitat conservation areas.	
S/WS/F -17 riparian habitat conservation areas	Additional areas requiring INFISH buffers are likely to be found during vegetation unit layout that are not currently identified on project area maps. These areas will be identified during implementation and the appropriate buffers and mitigations applied to them to meet INFISH (USDA 1995) and Helena Forest Plan standards. Riparian habitat conservation area boundaries -Category 1--Fish bearing streams have a riparian habitat conservation area width of 300 feet either side of the stream or the 100-year floodplain whichever is greater. -Category 2--For perennial streams not supporting fish, the riparian habitat conservation area is 150 feet either side of the stream. -Category 3-- For lakes and wetlands greater than one acre, the riparian habitat conservation area is a minimum of 150 feet but can be larger and extend to the outer limits of riparian vegetation, the extent of seasonally saturated soil, the extent of highly unstable areas, or the distance equal to the height of one site-potential tree. -Category 4--For Seasonally flowing or intermittent streams, wetlands less than one acre, landslides and landslide prone areas, the riparian habitat conservation area boundary is a distance equal to the height of one-half site potential tree from the edges of the stream channel, wetland, landslide, or landslide prone area, or a 50-foot slope distance, whichever is greatest. The following documents the specific treatment of dead hazardous trees within INFISH Categories 1 to 4 riparian habitat conservation areas associated with streams. Situations where dead trees may be felled and comply with or exceed INFISH standard RA-2. If the tree is between the creek and the road, within a tree length of the road, leaning toward the road, and is not within a tree length of the creek and does not fall into what is considered a wider floodplain category (the situation where side channel development is possible) then the tree may be felled but kept on site. If the tree is between the creek and the road, within a tree length of the road, not within a tree length of the creek, is on	See riparian habitat conservation area map with INFISH buffers

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
	a bench elevated above the floodplain, and is leaning toward the road, the tree can be felled, but must remain on site. Dead hazard trees within the riparian habitat conservation area can be felled in the situation where the road is between the creek and the tree, but must remain on site. Any portion of the tree spanning the stream will be left in place. For the situation where the road parallels a stream and then crosses a tributary to the stream, the dead hazard trees on the uphill side of the road, including those within a tree length of the tributary, can be cut, but left on site. In all situations, that portion of the tree that obstructs the road will be moved off the road but remain on site.	
S/WS/F -18 Stream Management Zones	The State of Montana Stream Management Zone Law (2007) prohibits broadcast burning in streamside management zones (see Rule 3 (26.6.603), specific to prescribed burning). During broadcast or underburning, no ignition will take place in a streamside management zone; although some fire may back into the streamside management zone, efforts will be taken to restrict fire from backing into the streamside management zone.	Streamside management zone portions of units
S/WS/F-19	Follow standard Forest Service timber contract road best management practices. Cross-drain culverts on existing roads to be used for hauling in the project area would be brought up to standard for functionality. Follow all applicable road and harvest best management practices listed in the FS Soil and Water Conservation Practices Handbook (USDA 2010)	All treatment units
S/WS/F-20	Avoid hauling and other heavy-equipment traffic during conditions where the road surface is at or near saturation.	All treatment units
S/WS/F-21	Avoid snowplowing on any road adjacent to a stream as much as possible. At stream crossings, avoid side-casting of snow into the stream. Leave drainage points in the snow berm to avoid concentration of snowmelt on the road surface.	All treatment units
S/WS/F-22	Avoid use of heavy equipment in any wetland identified during unit layout.	All treatment units
S/WS/F-23	Minimize cleaning of vegetated roadside ditches that are providing adequate road drainage.	All treatment units
S/WS/F-24	Areas cleared of vegetation such as landings or roadside drainage ditches would be seeded with an approved native seed mix.	All treatment units
S/WS/F-25	Erosion control and drainage improvement best management practices would be used to reduce sediment at stream crossings. Sediment filtering devices (e.g., filter fence and weed-free straw bales) would be used as needed to limit erosion and delivery of disturbed material into streams or ephemeral drainages.	All treatment units

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
S/WS/F-26	Sediment sites 607-E-01 on Stonewall Creek and 626-B1-01 on a tributary to Lincoln Creek would have sediment-filtering devices installed combined with gravel surfacing to reduce erosion.	Roads
VIS-	**Visual Design Feature**	
VIS-1 Intermediate and Regeneration Harvest and Pre-commercial Thinning	Along roadways boundaries and private property, vary unit sizes, widths, shapes and distance from the center line. Consider leaving single trees and/or groups of trees to visually connect with the unit's edges. Utilize natural breaks in topography and vegetation type to delineate treatment edges. Feather the edges to avoid a shadowing or edge effect in the cut unit. Where the unit is adjacent to denser forest including private land, the percent of thinning within the transition zone would be progressively reduced toward the outside edge of the unit. In addition, vary the width of the transition zone. Where the unit interfaces with an opening, the percent of thinning within the transition zone would be progressively increased toward the outside edge of the unit. In addition, vary the width of the transition zone. Soften edges by thinning along unit boundaries, and removing larger trees and favoring smaller ones, where applicable. This would reduce a vertical wall or edge effect.	Units 1a, 10, 13a, 13b, 17a, 17b, 20, 39, 40 and 46
VIS-2 Road, Skid Trail, and Landing Construction	Where feasible, locate and orient roads to minimize cut and fill. Cut and fill banks would be sloped to accommodate natural revegetation. Cut and fill slopes would be revegetated with native species where ever possible.	All roads built then obliterated
VIS-3 Road, Skid Trail, and Landing Construction	Side cast topsoil during the construction of roads built then obliterated immediately following timber removal, to use topsoil for obliteration and rehabilitation.	All roads built then obliterated
VIS-4 Road, Skid Trail, and Landing Construction	Where roads built then obliterated immediately following timber removal and skid trails meet a primary travel route, they should intersect at a right angle and, where feasible, curve after the junction to minimize the length of route seen from the primary travel route.	Units 13b and 46
VIS-5 Road, Skid Trail, and Landing Construction	Where feasible, retain screening trees one tree-height below roads and landings (including cable landings) when viewed from below. Avoid creating a straight edge of trees by saving clumps of trees and single trees with varied spacing.	All roads built then obliterated, all landings
VIS-6	When viewed from above, retain, screening trees one tree-height above roads and landings and/or prescribe a higher	All roads built then obliterated, all landings

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
Road, Skid Trail, and Landing Construction	leave basal area. Avoid creating a straight edge of trees by saving clumps of trees and single trees with varied spacing.	
VIS-7 Road, Skid Trail, and Landing Construction	Log landings, roads, and bladed skid trails should be minimized within sensitive view sheds.	Units 1a, 13b, and 46
VIS-8 Slash Treatment	In sensitive foreground areas, stumps should be cut to eight inches or less in height, where possible. Spread soil on cut stumps to reduce color contrast where cut stumps are visible in sensitive foreground areas.	Units 2, 13b, 46, 73, 79, 79a, 80a, 82, 83, 84, 85, 87 and 88
VIS-9 Slash Treatment	Burn piles would be completely burned, or residual burnt material would be scattered within sensitive viewsheds.	Units 1a, 13b, and 46
VIS-10 Unit Marking	Use cut tree (as opposed to leave tree) marking or species designation, as determined by a landscape architect and presale forester to minimize marking in visually sensitive areas.	Units 1a, 13b, 16, 17b and 46
VIS-11 Unit Marking	Unit boundaries would be marked with water-based paint.	Units 1a, 13b, 16, 17b and 46
VIS-12 Prescribed Fire	See FUEL-2	Unit 46
VIS-13 Tree Planting	Tree planting should be completed in an irregular pattern with clumping to mimic future islands similarly found in the characteristic landscape.	Planting units
WL-	**Wildlife Design Feature**	
WL-1 Roads	To retain habitat for snag-dependent species and species dependent on large diameter trees, the location of roads to be built then obliterated immediately following timber removal would ensure, whenever practical, that veteran and relic survivor trees and snags would not be removed during construction.	All road construction/obliteration
WL-2 Roads	To maintain habitat for snag-dependent species, the timber sale contract or contract administrator would ensure, whenever practical, that the design of skid trails and cable corridors avoid veteran and relic trees and snags.	All Harvest Units
WL-3 Roads	Existing roads that are currently closed or restricted and utilized for this project would be retained in their pre-project road status.	All roads
WL-4 Roads	Roads built then obliterated immediately following timber removal will be closed (e.g., gates, barricades) throughout project implementation to limit use to administrative use only.	All road construction/obliteration

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
WL-5 Snags	Retain a minimum of two, 12 to 20-inch diameter-at-breast-height. snags per acre. If snags are not available, retain recruitment trees. Preferred species for retention include larch, ponderosa pine, Douglas fir, spruce and sub-alpine fir, in that order. No lodgepole snags would be retained to meet Forest Plan direction.	All Harvest units
WL-6 Snags	In harvest and pre-commercial thinning units, retain snags greater than 20 inches diameter of any species unless they pose a specific safety or operability concern.	Harvest and pre-commercial thinning units
WL-7 Snags	In prescribed burn units retain snags greater than 12-inches in diameter unless they pose a safety hazard.	Prescribed burn units without harvest or pre-commercial thinning treatments
WL-8 Snags	Whitebark pine snags would be retained unless they pose a safety or operability concern.	Harvest and prescribed burn units
WL-9 Downed Woody Debris	Forest Plan wildlife downed woody debris objectives would be met through retention guidelines under S/WS/F-3. The following measures would be implemented to ensure larger diameter material is left on site: • Where they are present on site, maintain at least four down logs per acre at least 12-inches diameter (at large end) and 20 feet long. • During burning, avoid the consumption of large coarse woody debris (e.g. logs greater than 10 inches diameter at midpoint) to the extent possible.	All treatment units.
WL-10 Vegetative Diversity	Where feasible and when consistent with fuel reduction objectives, use control lines and firing techniques to maintain pockets of understory vegetation and shrubs retained during timber harvest and small pockets of understory vegetation at scattered locations in un-harvested burn units.	All burn units
WL-11 Vegetative Diversity	Units would be evaluated following burning to determine if protective measures (e.g., fencing or grazing modifications) are necessary to allow vegetation recovery and promote aspen. This should be coordinated with the wildlife biologist if necessary.	All burn units
WL-12 Aspen	Promote and protect existing aspen as needed during implementation.	All treatment units
WL-13 Elk	If elk calving (late May through mid-June) or nursery areas (late June through July) are identified prior to or during project implementation, management activities would be delayed during active periods.	All treatment units
WL-14 Elk	To minimize impacts to elk, logging operations will be limited to one drainage at a time, designed to provide undisturbed areas within the drainage, and work would be completed in the shortest time frame possible.	All treatment units

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
WL-15 Elk	If an elk wallow is identified during layout, treatment would be modified if necessary to ensure that adequate cover is retained adjacent to the wallow.	All treatment units
WL-16 Elk	Recreational use of firearms would be prohibited for anyone working within an area closed to the general public.	All treatment units
WL-17 Elk	Slash depth would not exceed 1.5 feet across regeneration harvest units.	All regeneration harvest units.
WL-18 MIS	If nest sites for management indicator species are discovered during the layout or implementation of the project, the wildlife biologist would be notified to determine appropriate protection measures.	All treatment units
WL-19 Goshawk	Maintain a 40-acre no-activity buffer around known goshawk nests. Within the Stonewall East nest territory (Sucker Creek drainage), no openings created by mixed severity burning will occur between the 40-acre no-activity buffer and within a 180-acre radius of the nest.	Units 43, 72 and 80a
WL-20 Goshawk	Within active goshawk territories restrict ground disturbing activities inside post-fledgling areas (420 acres) between April 15th and August 15th. This will be coordinated with a wildlife biologist and buffer distances will be expanded if field data indicates that it is necessary.	Units 43, 72 and 80a
WL-21 Raptors	If raptor nests are identified during project implementation, a wildlife biologist would be contacted and appropriate buffers and Limiting Operating Periods established.	All treatment units
WL-22 TES	If any threatened, endangered or sensitive species are located during project layout or implementation, a wildlife biologist would be notified. Management activities would be altered, if necessary, so that protection measures can be taken.	All treatment units
WL-23 Lynx and Elk	Cutting of brush along low speed (closed) roads will be done to the minimum amount necessary for safety.	Roads to be identified during implementation
WL-24 Lynx	Within burn units outside the two-mile zone of the wildland urban interface, a pre-treatment field review, coordinated by a wildlife biologist, would identify firing patterns and control lines necessary to ensure that inclusions of stand initiation and multi-story hare habitat are not affected.	Units 82, 83, 84 and 88
WL-25 Lynx	To promote or maintain lynx habitat characteristics while reducing fuels and promoting aspen/ponderosa pine, treatment would be designed and laid out in coordination with a wildlife biologist.	Units 40, 42, 43, 46, 47 and 75
WL-26 Bald Eagle	Project prescribed burn plans would consider the Beaver Creek eagle nest as sensitive and ensure that smoke is adequately dispersed away from the nest during the nesting season (January 1 through July 15th).	All burn units

DESIGN FEATURE	STONEWALL VEGETATION PROJECT DESIGN FEATURE	DECISION
WL-27 Bald Eagle	Aircraft associated with proposed burning shall not be permitted within 1,000 feet of the Beaver Creek nest between January 1 and August 31.	All burn units
WL-28 Migratory Birds	To the extent possible prescribed burns and underburning will be implemented prior to May 15 or after July 31 to protect nesting birds. For any burning proposed after May 15 due to wet spring conditions the district biologist will be consulted to assess or mitigate potential impacts to migratory birds.	All underburning units
WL-29 Grass/forb and Shrub Communities	To maintain a shrub component, and where feasible and consistent with fuel reduction objectives, use control lines and firing techniques to maintain 30 to 50 percent of existing shrubs in a patchy mosaic.	Unit 88
WL-30 Old Growth	Stands classified as old growth would be burned with a low-intensity fire to minimize mortality to trees greater than 17 inches diameter-at-breast-height and consumption of down woody material. Burn planning and implementation will be conducted in consultation with Timber/Silviculture.	Unit 2 and 46
WL-31	No old growth will be treated within harvest units.	All harvest units
WL-32 Harvest Activities	All activities associated with harvest operations, road construction and road maintenance will be restricted to the period between June 1 and November 30.	Project Area

Monitoring Plan

Noxious weed monitoring will consist of visually surveying all units that were previously infested. Areas that were not previously infested will be monitored for weeds by visually surveying the units in year one and year three following the disturbance and/or rehabilitation. If weed populations are found, those areas will be treated according to label guidelines and within the guidance provided in the Helena National Forest Weed Treatment Project final environmental impact statement (2006).

If additional sensitive plant populations are found during implementation, those populations will be monitored to insure mitigation measures are effective.

All landings, skid trails or other areas of disturbance due to the logging activities that have over 10 percent soil surface disturbance will be monitored for weed infestations each spring for three seasons following implementation. If any of the species on the Montana Noxious Weed list or County lists are located within the disturbed areas, the infestations will be treated using appropriate herbicides for three seasons following the harvest activity.

If it is determined that illegal off-highway vehicle (OHV) use is taking place in areas where treatments have occurred, steps should be taken to prohibit the use (i.e. signing, barrier installation, increased law enforcement).

Monitor National Forest System trail conditions following prescribed burning to determine if there is a need for increased trail maintenance for specific areas due to fallen trees or increased erosion.

Monitoring cultural resources is recommended after signing of the record of decision, as well as during and after project implementation, to ensure that the mitigation measures are implemented. The following monitoring plan is recommended:

- Conduct a field check on all cultural resources identified within treatment units to make sure they are visibly flagged for avoidance before implementation.
- Random site visits should occur during project implementation to ensure protection measure are being followed.
- Conduct site visits to all cultural resources within treatment units after implementation, but before the contract is closed, to ensure known cultural resources where not damaged.
- Close coordination between Helena National Forest heritage specialist, timber sale administrator, and fuel specialist will need to be done to ensure protection of cultural resources.

If any additional cultural resources are discovered during implementation of this project, work should cease in the area and a Forest archaeologist would be contacted. Work in the area could only resume if mitigation measures can be determined and/or re-evaluated if necessary.

A meeting between Helena National Forest Heritage Specialist, the Timber Administrator and the Contractor (once awarded) should be done to stress the importance of protecting known cultural resources within the treatment units.

For a units scheduled for burning, close coordination between Helena National Forest Heritage and Fuel Specialist will need to be done to ensure protection of cultural resources. The monitoring above applies to burn units as well.

It is recommended that mechanical harvest activity should avoid the exclusionary zone of the Old Lincoln Townsite. An archaeologist should monitor harvesting activities onsite at the Lincoln Ditch (and its various segments in the area of potential effect) and the historic Kosta Cabin site. A Forest Service archaeologist should be given one weeks' notice to be on site before harvest or burning activities occur.

Roadless area monitoring will consist of visually surveying units treated with prescribed fire to determine if illegal off-highway vehicle use is taking place in treated areas. If monitoring reveals this is happening, steps will be taken to eliminate the use (i.e. signing, barrier installation, increased law enforcement).

The following road management monitoring recommendations are suggested for road facilities:

- Complete the annual roads accomplishment report (RAR).
- Roads within the project area should be surveyed as needed to comply with Forest Service-assigned road condition, survey requirements for deferred maintenance needs and real property inventory.

Best management practices evaluations should be performed periodically by the sale administrator. Best management practices evaluations should focus on effectiveness and on whether best management practices were applied.

The Southwestern Crown Collaborative is one of the original 10 Collaborative Forest Landscape Restoration Projects selected for funding in 2010 and one of 23 in the nation. The Southwestern Crown Collaborative is investing 10 percent of the Collaborative Forest Landscape Restoration funds to monitoring each year. The Southwestern Crown Collaborative Long-term Monitoring Plan and the five-year monitoring summary describes the monitoring approach and the ongoing monitoring effort within the Southwestern Crown Landscape (SW Crown) (http://www.swcrown.org/monitoring/). The plan lists management questions and 26 monitoring projects were developed and initiated between 2010 and 2015 to help inform future management planning and decisions.

Two monitoring efforts include data collected within the Stonewall project area: Integrated Forest Vegetation and Carnivore Monitoring.

Forest Vegetation

This project is monitoring the ecological effects of vegetation management treatments. More specifically, we are monitoring effects on forest structure and composition, tree mortality and regeneration, fuels, soils, and native and non-native plants.

Using the United States Forest Service Northern Region Common Stand Exam protocols for measurements. In 2012, 20 pre-treatment plots and 20 control plots were established in the Stonewall project area. (Figure 1) The monitoring plots will be re-measured post-treatment and then three to five years through at least 2024.

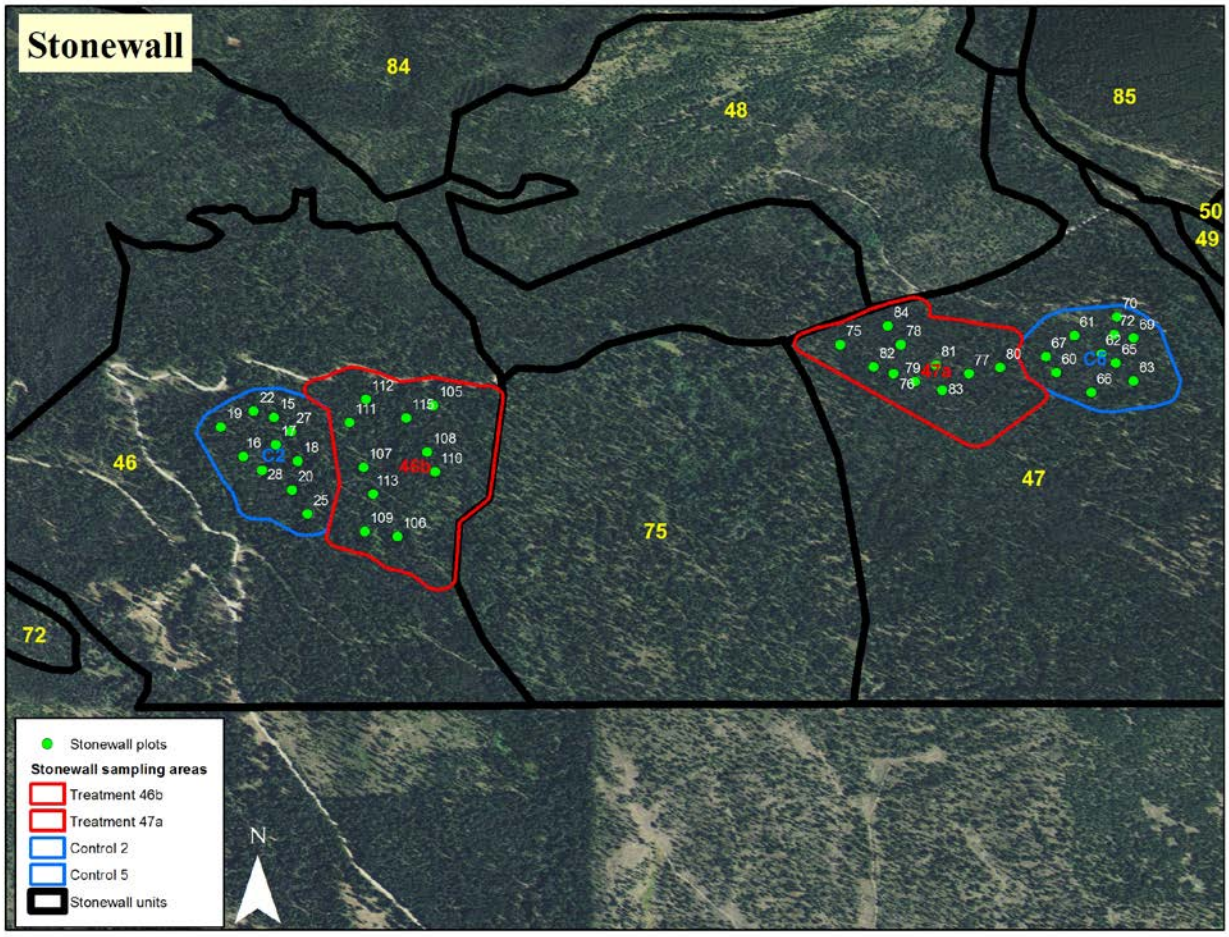

Figure 1: Integrated Forest Vegetation Monitoring Plots installed in 2012.

Carnivore

The primary objective of monitoring forest carnivores in the Southwest Crown is to facilitate and coordinate the adaptive management of wolverines, Canada lynx, and fisher by agency managers across the landscape. This monitoring project was designed to provide a baseline of the current distribution of the focal species in the Southwest Crown and to allow for tracking changes in that distribution over time.

The Southwest Crown carnivore project utilizes non-invasive survey methods to maximize the ability to detect multiple species across a large landscape, including the Stonewall project area, in an efficient and cost effective manner. Snow track surveys and DNA collection methods (hair snares and bait stations), developed by researchers with the United States Forest Service Rocky Mountain Research Station, were used. In addition, a subset of bait stations equipped with motion-sensor photo or video cameras to capture

the activity of individuals at bait stations were established. In order to standardize the approach across the Southwest Crown, a five by five mile grid was overlaid on the entire landscape and surveys and bait stations were deployed systematically in these grid cells. Field seasons were started in the beginning of January and ran through the end of March. DNA samples were processed by the Rocky Mountain Research Station and identified to species and individual. Across three years (2012 to 2014), 82 of the 129 grid cells within the Southwest Crown were monitored and snow-track surveys were conducted on over 1,000 miles each year within those grid cells. See the intensity of surveys in the stonewall area in Figure 2.

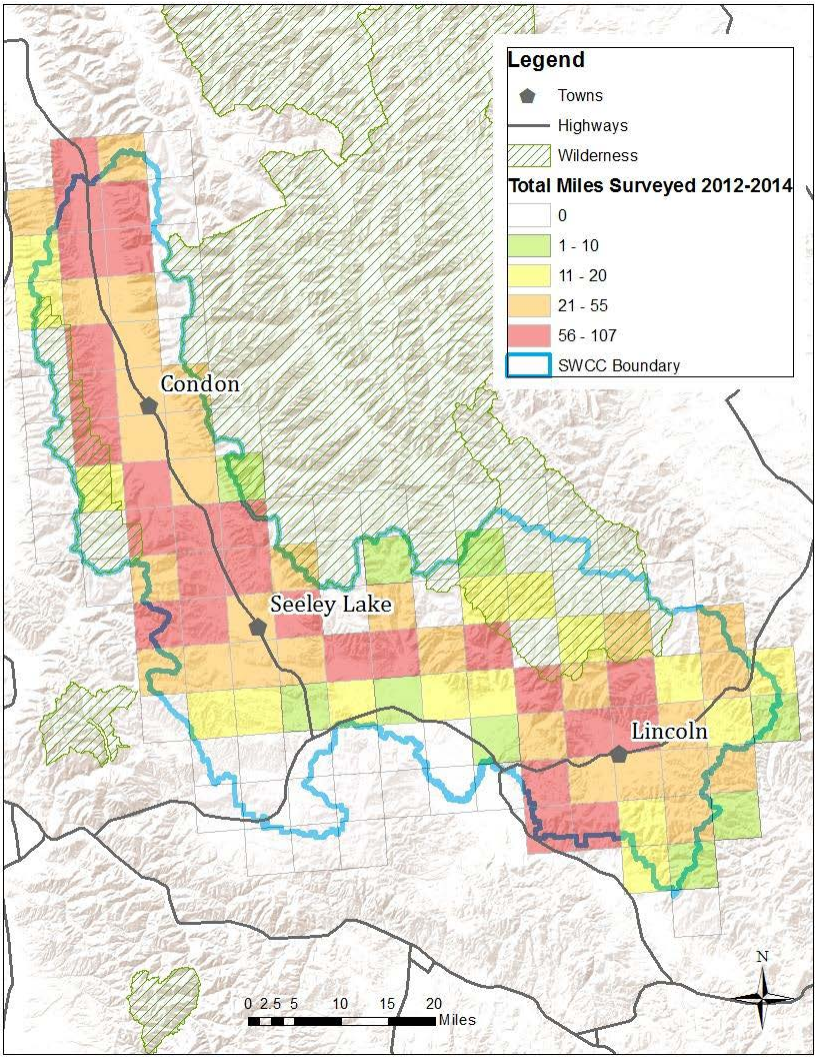

Figure 2. Total miles of track surveys by grid cell 2012 to 2014

Across the 1.5 million acre Southwest Crown, lynx were detected in a total of 36 grid cells from 2012 to 2014 (Figure 3). DNA samples identified 18 unique Canada lynx, including 13 males and five females. Of these animals, 13 were new to regional databases. Survey work also uncovered at least one previously unknown "hotspot" for lynx within the landscape in the Lincoln Ranger District. Over the course of the survey period, wolverines were detected in a total of 38 grid cells (Figure 3) and DNA samples identified 15 unique wolverines: six males and nine females. Wolverines were detected at elevations ranging from 3,346 to 7,567 feet.

Monitoring is planned to continue annually until at least 2022.

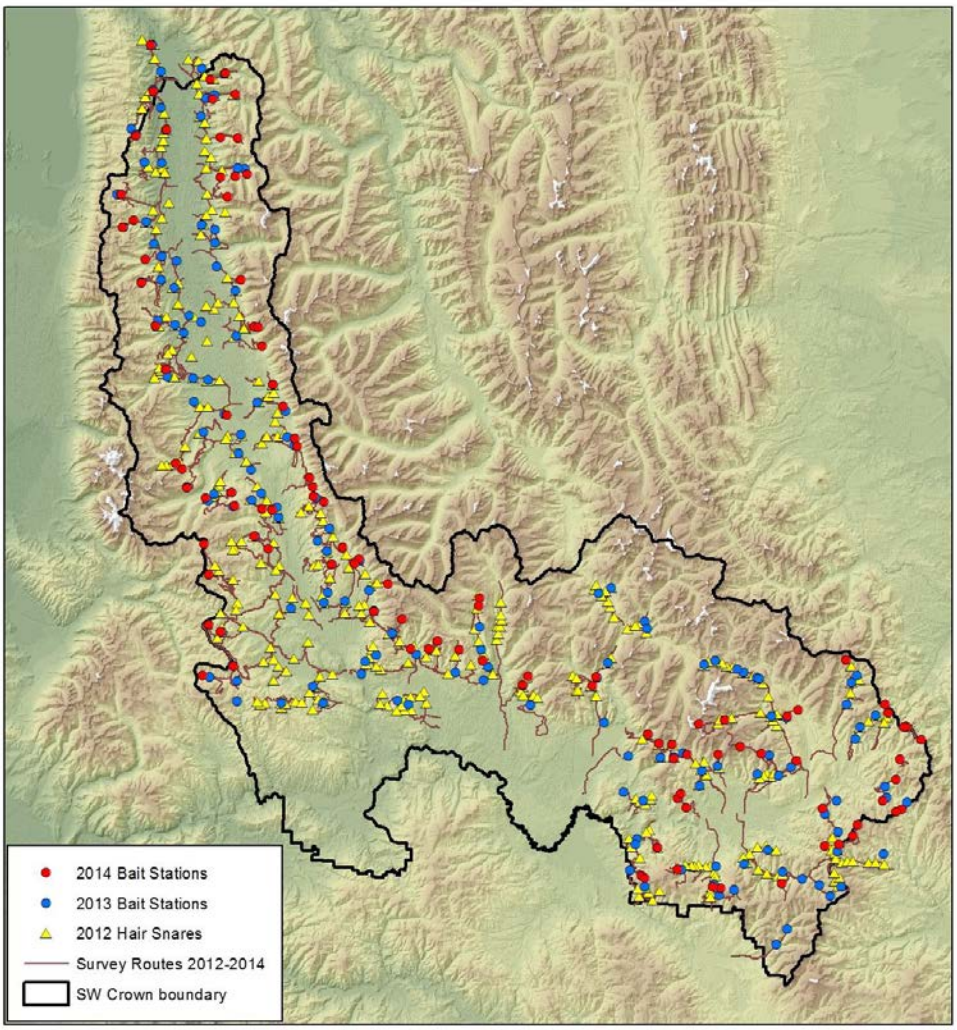

Figure 3. Locations of track survey routes, hair snares, and bait stations in the Southwest Crown 2012 to 2014.

Appendix C: Helena National Forest Land and Resource Management Plan Non-significant, Site-Specific Forest Plan Amendment

Amendment

The Helena National Forest is amending the 1986 Helena National Forest Plan (Forest Plan) for lands encompassed by the Stonewall Vegetation Project. This site-specific amendment would exempt the Project from:

- Forestwide Standard 3 for hiding cover on summer range (Forest Plan p. II/17) for the Beaver Creek and Keep Cool Creek elk herd units and thermal cover on winter range in the Beaver Creek and Keep Cool herd units
- Forestwide Standard 4a for open road densities during the big game hunting season (Forest Plan p. II/17-18) for the Beaver Creek and Keep Cool Creek elk herd units
- Management Area T-2 standard for thermal cover on winter range (Forest Plan p. III/35) within the management area in the project boundary
- Management Area T-2 and T-3 standards for hiding cover in timber harvest openings (Forest Plan III/35 and III/39) within the management areas within the project boundary.

The hiding cover and thermal cover standards in Management Area W-1 (Forest Plan p. III/50) are not subject to an amendment because the project will not alter cover in this management area. The amendment is a site-specific amendment and is applicable only to implementation of the decision for the Stonewall Vegetation Project. This is a one-time exemption and is not intended to replace the existing standards.

Background

Elk serve as a management indicator for hunted species for the Helena National Forest (Forest Plan p. II/17). Federal laws and direction applicable to management indicator species include the National Forest Management Act as well as the Forest Plan. The National Forest Management Act requires the Forest Service to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives" [16 USC 1604(g) (3) (B)]. Forest Plan Standards are in place to ensure that this requirement is satisfied.

The Forest Plan contains Forestwide big game standards and standards specific to each of the management areas identified in the Forest Plan. The standards that are the subject of this site-specific amendment are:

Forestwide Standard 3
Subject to hydrologic and other resource constraints, elk summer range will be maintained at 35 percent or greater hiding cover and areas of winter range will be maintained at 25 percent or greater thermal cover in drainages or elk herd units.

Forestwide Standard 4
Implement an aggressive road management program to maintain or improve big game security.

a. Road management will be implemented to at least maintain big game habitat capability and hunting opportunity. To provide for a first week bull elk harvest that does not exceed 40 percent of the total bull harvest, roads will be managed during the general big game hunting season to maintain open road densities with the following limits.

The existing hiding cover to open road density ratio should be determined over a large geographic area, such as a timber sale analysis area, a third order drainage, or an elk herd unit.

Table 9: Forest Plan Hiding Cover/Road Density

Existing Percent Hiding Cover (1)	Existing Percent Hiding Cover (2)	Max Open Road Density mi/mi^2
56	80	2.4
49	70	1.9
42	60	1.2
35	50	0.1

(1) Forest Service definition - a timber stand which conceals 90 percent or more of a standing elk at 200-feet;

(2) Montana Fish, Wildlife & Parks definition - a stand of coniferous trees having a crown closure of greater than 40 percent.

Management Area T-2 Standards
Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent thermal cover on identified winter range.

Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested.

Management Area T-3 Standards
Openings created by timber harvest will be reforested to the extent necessary to meet the hiding cover requirements of big game before harvesting adjacent areas.

The hiding cover analysis utilizes the Montana Department of Fish, Wildlife, and Parks definition included in the Helena National Forest Plan (p. II/18): a stand of coniferous trees having a crown closure of greater than 40 percent. The 40 percent canopy cover metric is an acceptable 'proxy' for mapping hiding cover as it is generally assumed that stands with 40 percent canopy cover or greater would in turn provide adequate vertical structure that would hide 90 percent of an elk at 200-feet, the functional definition of hiding cover (Black et al. 1976). This relationship of canopy cover and stand structure is based on modeling done by Lonner and Cada (1982) and others (e.g. Leckenby et al. 1985, Thomas et al. 1988) who used canopy cover to predict the relationship between hiding cover (as estimated by canopy cover), road densities, and harvest rate the first week of the general hunting season.

Specifically, the parameters used to map hiding cover include polygons with greater than 40 percent canopy cover and greater than 40 acres in size (USDA 2009b). Timber harvest or other activities that affect vegetation that have occurred within the last 15 years are removed from consideration as hiding cover even if the canopy cover and patch size criteria are met. This is based on the assumption that the trees within these areas are not tall enough to hide elk. So, even though tree height is not a parameter used to map hiding cover, it is accounted for by removing from consideration as hiding cover those stands within which vegetation management has occurred in the last 15 years.

Canopy cover spatial data used to map hiding and thermal cover are derived from R1-VMap based in part on the following documents: Region 1 Existing Vegetation Map Products (VMap) Release 9.1.1 (USDA 2009a), the Region 1 Multi-level Vegetation Classification, Mapping, Inventory, and Analysis System (USDA 2009b), and Region 1 Existing Vegetation Classification System and its Relationship to Region 1 Inventory Data and Map Products (USDA 2011). The analysis used the version of Region 1-Vmap that is available on the Forest based on 2005 imagery which does not reflect canopy loss and tree mortality associated with the mountain pine beetle outbreak that began around 2006.

The mountain pine beetle outbreak in the project area as well as in those herd units within which the project occurs has resulted in canopy cover losses in the lodgepole pine stands in the area. However, while these stands of trees remain upright they will continue to hide elk, despite losses in canopy cover (Figure 4). For this reason, the 2005 version of Region 1-VMap is assumed to accurately reflect current hiding cover despite the losses in canopy cover. This assumption has been validated by field data [see the Stonewall Elk Hiding Cover Synthesis/Management Area T-2 and T-3 Focus Report in the project record] as well as other studies that have relied on pre-disturbance vegetation characteristics to predict post-disturbance wildlife habitat (e.g. Russell et al. 2007, Nappi and Drapeau 2011, Latif et al. 2013). Furthermore, Smith and Long (1987) observed a well-defined relationship between elk hiding cover and high densities of lodgepole pine boles, conditions found in the project area.

In a study conducted on mountain pine beetle-killed lodgepole pine in Oregon, dead trees began falling five years after death in unthinned stands and 90 percent had fallen by year 14 (Mitchell and Preisler 1998). Fall rates of lodgepole pine killed by mountain pine beetle were slower in north-central Colorado (Klutsch et al. 2009); in British Columbia, 10 percent of dead trees were still standing 25 years later (Lewis and Hartley 2006). Rate of fall is influenced by tree size, soil moisture, climate, and the prevalence of windstorms, among other factors (Keen 1955). Trees in the project area that have been killed by the mountain pine beetle outbreak have generally been dead between three and seven years. As such, standing dead trees should continue to provide functional hiding cover in the project area for several more years (See Figure 4).

Figure 4: Photo of dead/dying lodgepole pine.

This is an example of the hiding cover properties in dead/dying lodgepole pine. Hiding cover measurements were taken in this stand that is primarily composed of dead/dying lodgepole pine. The cover board in the center of the photo is 200 feet away from the observer. Note that much of the cover board is obscured by standing dead trees.

Montana has maintained the longest general elk-hunting season (five-weeks) of all western states; a tradition that has been in place for several decades. When the Helena National Forest Plan was crafted in

1986, Forestwide Standard 4a was established to facilitate that longer hunting season while maintaining and/or improving big game security that would ensure that elk populations post-harvest remained aligned with Montana Department of Fish, Wildlife, and Parks objectives (USDA 1986, pp. 11/17-18 and V/5). At that time, Montana Department of Fish, Wildlife, and Parks collected data to determine the percentage of bulls harvested during the first week of the general big game hunting season, as reflected in Standard 4a. Montana Department of Fish, Wildlife, and Parks no longer collects those data to determine the percent of bulls harvested during the first week of the general rifle season. Rather, Montana Department of Fish, Wildlife, and Parks relies on bull to cow ratios measured through aerial survey trend counts[6]. These trends are used to determine harvest regulations that allow Helena National Forest Plan to achieve elk population objectives (MFWP 2005). As such, this analysis utilizes bull to cow ratios to determine if the project is aligned with the intent of Standard 4a, to maintain or improve big game security while providing for an extended hunting season. While the bull to cow ratio may be a different metric than was originally described in the Helena National Forest Plan, it reflects updated methodologies employed by Montana Department of Fish, Wildlife, and Parks to regulate elk populations.

Management Area T-2 occurs *"where big game range and timber values are present"* (Forest Plan III/34). The management goals include providing for the maintenance and enhancement of big game winter range.

Management Area T-3 *"consists of lands that have primary forage, resting, and security characteristics that provide important spring and summer requirements for all big game species"* (Forest Plan III/38). The management goals include providing for the maintenance and/or enhancement of habitat characteristics favored by elk and other big game species.

Rationale

The project area includes two elk herd units that are the subject of this amendment - Beaver Creek - Lincoln and Keep Cool Creek - and two management areas - T-2 and T-3. The wildlife analysis for this project indicates that the existing condition for the Keep Cool Creek herd unit is below Forest Plan Standard 3 in terms of hiding cover and both herd units are below Forest Plan Standard 3 in terms of thermal cover. Both herd units are below Forest Plan Standard 4a. Note that the Klondike Fire further reduced hiding cover in both herd units and the Sucker Creek reduced hiding and thermal cover in the Keep Cool herd unit (See *appendix E, Supporting Documentation for the Decision, Big Game - Elk*).

The existing condition in Management Area T-2 is below the thermal cover standard for the area. In addition, there are several past harvest units in management areas T-2 and T-3 that do not currently provide hiding cover requirements of big game that are adjacent to proposed harvest units. The project would result in the removal of hiding and thermal cover that would move these elk herd units further away from consistency with Forest Plan Standard 3 and 4a for both elk herd units, would further reduce thermal cover in Management Area T-2, and would treat areas adjacent to past harvest that does not currently provide hiding cover. The information used in this amendment is based on the wildlife analysis completed for the Stonewall Vegetation Project Environmental Impact Statement and the supporting documentation for the Decision (See *appendix E*, below).

[6] Each Elk Management Unit and/or Hunting District has population objectives that identify the desired bull/cow ratio post-harvest. Some hunting districts include either a desired bull/cow ratio or a desired percent of bulls in the post-harvest trend counts. Other hunting districts only specify a desired percent of harvest of brow-tined bulls. See Montana Fish, Wildlife and Parks (2005) for detailed information by elk management unit/ hunting district. The hunting districts within which the Helena National Forest occurs include: 215, 280, 281, 293, 335, 339, 343, 380, 390, 391, 392, 455, and 446.

Table 10 and Table 11 summarize the effects to hiding and thermal cover, respectively, associated with the Decision relative to Forest Plan Standard 3. The Decision would result in the removal of 3,367 acres of hiding cover in the Beaver Creek herd unit and 916 acres of hiding cover in the Keep Cool herd unit. Remaining percentages of hiding cover are 45 percent and 29 percent in the Beaver Creek and Keep Cool herd units, respectively, which are below the Standard 3 threshold of 50 percent. Thermal cover in the Beaver Creek herd unit would be treated on 293 acres and 104 acres in the Keep Cool herd unit in the Decision. Remaining percentages of thermal cover are three percent for both herd units, below the 25 percent threshold for thermal cover in Standard 3.

Table 10: Acres (percent) of remaining* elk hiding cover on summer range by elk herd unit in the existing condition (post-fire) and Decision and Forest Plan (FP) consistency

Parameter	Existing Condition Post Fire		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Elk Hiding Cover acres (percent)	18,021 (56 percent)	13,968 (32 percent)	14,451 (45 percent)	12,964 (29 percent)
Meets Forest Plan Standard 3	Yes	No	No	No
*In order to qualify as Forest Plan elk hiding cover, patches of hiding cover must be at least 40 acres in size.				

Table 11: Acres (percent) of remaining* elk thermal cover on winter range by elk herd unit in the existing condition (post-fire) and the Decision and Forest Plan (FP) consistency

Parameter	Existing Condition Post Fire		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Winter Range Thermal Cover acres (percent)	938 (5 percent)	471 (3 percent)	598 (3 percent)	353 (3 percent)
Meets Forest Plan Standard 3	No	No	No	No
*In order to qualify as Forest Plan elk thermal cover, patches of thermal cover must be at least 15 acres in size.				

Table 12 summarizes the effects to the hiding cover/open road density associated with the project for Standard 4a. The open-road density associated with the project would remain the same as the existing condition post-treatment. Approximately 0.9 miles of temporary road would be constructed in the Beaver Creek herd unit followed by full obliteration post-treatment in the Decision. An additional 9.6 miles of currently closed roads would also serve as haul routes in the Beaver Creek herd unit. Open road density during project implementation in the Beaver Creek herd unit would increase to 1.7 mi/mi^2. There is no road construction in the Keep Cool herd unit; nor are any closed roads being used for hauling. All temporary roads and currently closed roads used for hauling would remain closed to the public.

Table 12: Hiding cover and open road densities by herd unit in the existing condition (post-fire) and Decision

Parameter	Alternative 1		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Open Road Density mi/mi^2	1.4	1.3	1.4[1] (1.7)[2]	1.3[1] (1.3)[2]
Percent Hiding Cover (Post-Fire)	56 percent	32 percent	45 percent	29 percent
Meets Forest Plan Standard 4a	No	No	No	No

Table 13 summarizes the changes to thermal cover in T-2 in the Decision.

Table 13: Effects to thermal cover in Management Area T-2 in the Decision

Parameter	Existing Condition Post Fire	Decision
T-2 - Thermal Cover Acres (percent) on Winter Range[1] in the Project Area	251 (16 percent)	145 (9 percent)
[1]There are 1,559 acres of winter range in T-2 in the project area.		

Thermal cover in T-2 on winter range in the project area is reduced in the Decision from 251 acres to 145 acres (16 percent to 9 percent).

Figure 5 and Figure 6 display the existing hiding cover in T-2 and T-3, respectively, in relation to the Decision and openings created by past harvest that do not yet provide hiding cover. There is one small opening in T-2 that is currently not hiding cover while there are several in T-3.

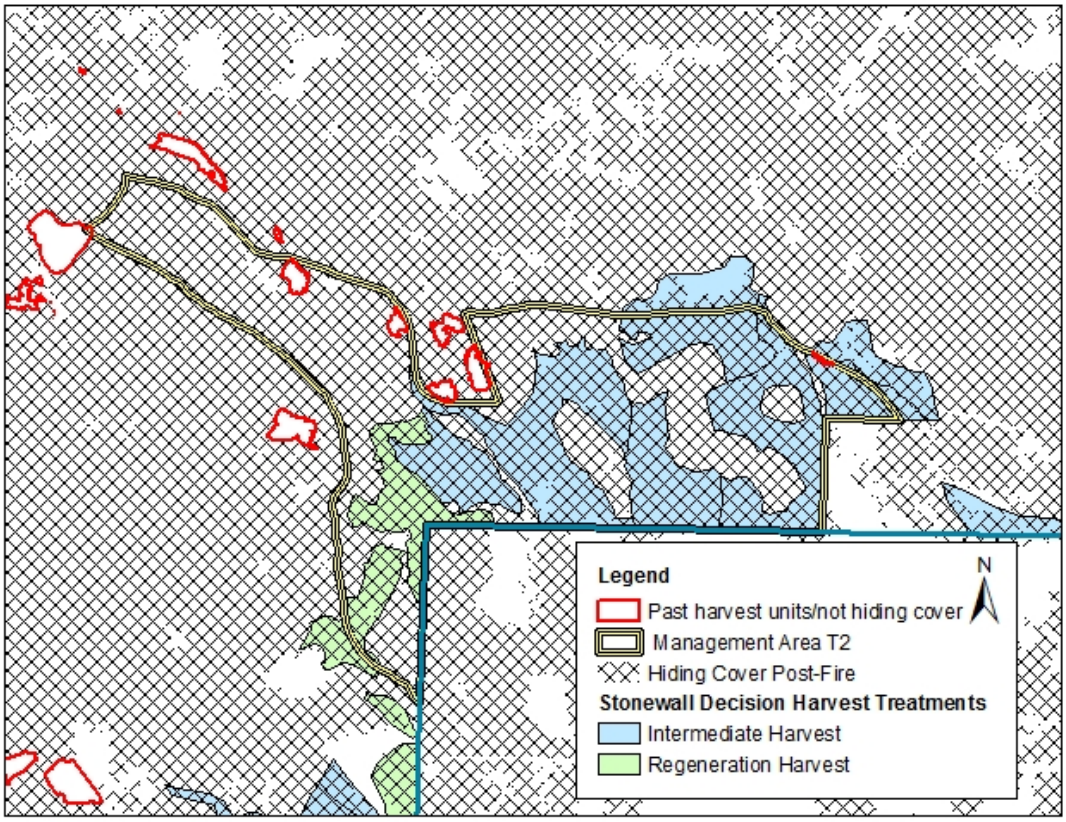

Figure 5: Past harvest units in Management Area T-2 currently not providing hiding cover that are adjacent to harvest treatments in the Decision

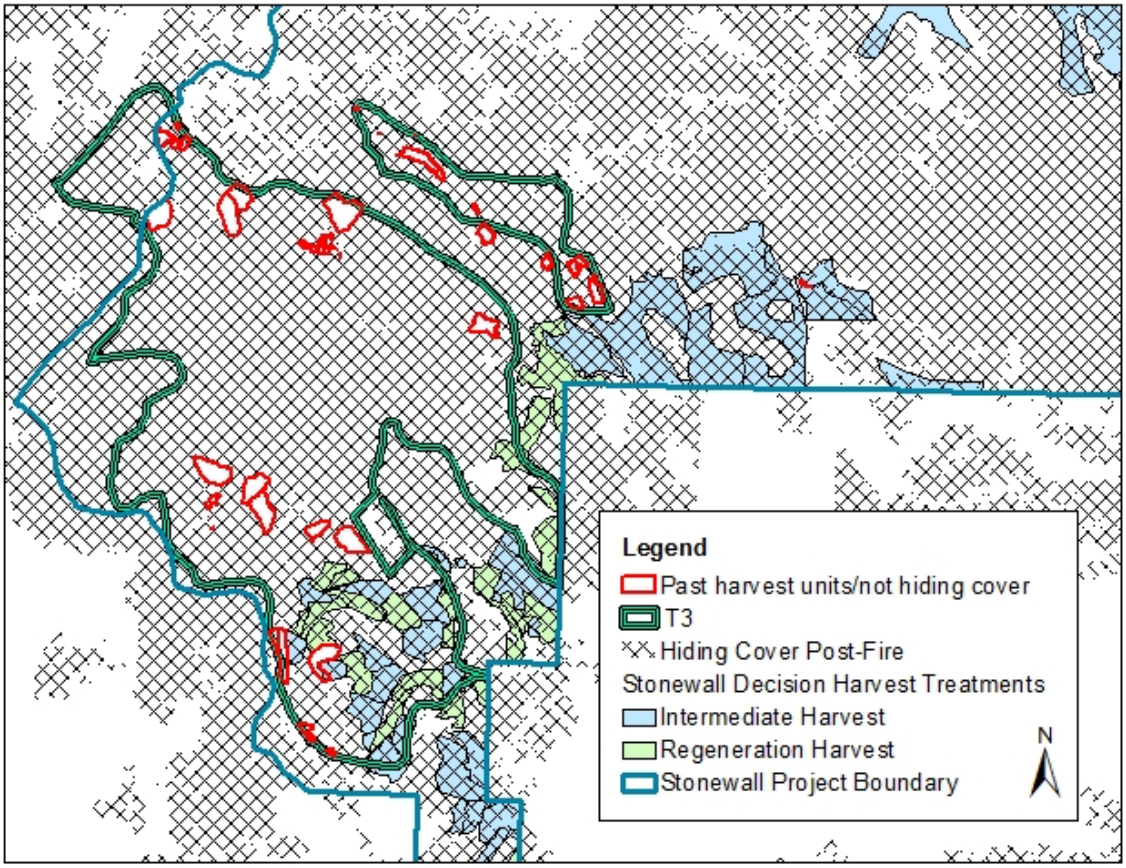

Figure 6: Past harvest units in Management Area T-3 currently not providing hiding cover that are adjacent to harvest treatments in the Decision

Exempting this project from Standard 3, and Standard 4a, as well as the thermal cover standard in management area T-2 and the units adjacent to openings without hiding cover standard in management area T-2 and T-3, may affect elk to some extent due to the removal of hiding and thermal cover from these elk herd units. The Decision would result in the removal of 3,367 acres of hiding cover in the Beaver Creek herd unit and 916 acres of hiding cover in the Keep Cool herd unit. Thermal cover in the Beaver Creek herd unit would be treated on 293 acres and 104 acres in the Keep Cool herd unit in the Decision. Although elk use of the landscape would be altered, forage conditions would improve on the acres where cover is removed. Remaining thermal and hiding cover would be interspersed with forage.

Regardless of project implementation, this loss of cover would occur naturally over the next few years due to extensive tree mortality and natural tree fall associated with the mountain pine beetle infestation (Mitchell and Preisler 1998, Lewis and Hartley 2005, among others). Dead trees within treatment areas comprised of lodgepole pine would continue to fall at which time these areas would no longer provide hiding cover. However, the removal of hiding and thermal cover may be more beneficial for elk in the long run in terms of quickening the regeneration rate of new forests in the Beaver Creek and Keep Cool herd units.

The project may also result in short-term disturbance to elk. However, project design features would be included to minimize these disturbances. These measures include: restricting public use of temporary roads and restricting logging operations to a single drainage at a time, among others (See *appendix B: Project Design Features, Best Management Practices and Mitigation for the Action Alternatives*).

The amendment to exempt this project from Standards 3 and 4a and the hiding and thermal cover provisions of management areas T-2 and T-3 should have minimal effect on overall elk populations. The two herd units that are the subject of this amendment are located in hunting district 281 in the Bob Marshall Wilderness Complex Elk Management Unit as defined in the statewide Montana Elk Plan prepared by the Montana Fish, Wildlife, and Parks (*See pages 104-129 in MFWP 2005*). The Montana Elk Management Plan provides detailed information on the elk management unit relative to goals, objectives, and management challenges. Excerpts are presented in Table 14.

Table 14: Elk populations and objectives for the Bob Marshall Wilderness Complex Management Unit

Elk Management Unit	Hunting District	Elk Populations for the EMU	Population Objectives HD 281
Bob Marshall Wilderness Complex	281	More than 80 percent of the elk observed in this elk management unit use wilderness habitats during at least a portion of the year. Elk populations wintering in hunting districts 281, 282, 282, and 285 are near modern day highs. The numbers of elk observed in hunting district 481 has increased steadily since 1980, with over 700 elk observed in 2003.	During the post season aerial surveys: maintain 500 to 700 elk, with 150 to 200 elk in the Beaver-Keep Cool area; maintain less than 200 elk on private ranches in hunting district 281; maintain at least 15 bulls:100 cows, or 8 percent bulls among total elk observed.

Aerial surveys conducted by Montana Department of Fish, Wildlife, and Parks personnel within hunting district 281 indicate that total elk numbers have been relatively stable since 2001 and are currently at population objectives (Table 15). Meanwhile, hiding and thermal cover has been relatively stable since 2000 in hunting district 281 as well as within the project area until the recent mountain pine beetle outbreak. The mountain pine beetle outbreak in the project area has killed forested stands of primarily lodgepole pine and to a lesser extent the ponderosa pine at the lower elevations in the project area. However, many of these trees are still standing and continue to provide hiding cover. This is expected to change over the next several years as dead trees fall. So, despite the status of elk hiding cover in the project area, elk populations have been generally stable in hunting district 281 (Figure 7). This could be due to many factors including extensive use of wilderness habitats by elk that winter in hunting district 281, protection of elk habitat since 1992 with conservation easements, and control of noxious weeds in the elk management unit (MFWP 2005, pages 106-114).

Bull/cow ratios have been somewhat variable, ranging from 4 bulls/100 cows to 21 bulls/100 cows. The objective for the hunting district is a minimum of 15 bulls/100 cows. The ratio of calves/100 cows averaged 22 over the last five years, with 21 calves/100 cows counted in 2014[7]. According to the Elk Plan, a Standard Regulation (six-week season and approximately 150 permits) is recommended in hunting district 281 if during the post-season aerial trend survey the number of elk is between 500 and 700 and more than 20 calves/100 cows are observed (MFWP 2005, page 122). Of the primary Montana Department of Fish, Wildlife, and Parks population parameters likely to be impacted by elk security habitat on the Helena National Forest (namely, total population numbers and bull/cow ratios), total numbers on average have met Montana Elk Plan objectives for the past several years while bull/cow

[7] 2015 elk survey data are in the process of being compiled by Montana Fish, Wildlife and Parks.

ratios have fluctuated and are currently below average. The project would make no changes that would influence these conditions.

While many factors contribute to elk numbers, exempting the project from Standards 3 and 4a, and hiding cover and thermal cover standards for management areas T-2 and T-3, should not preclude the ability of Montana Department of Fish, Wildlife, and Parks to realize its elk objectives in this hunting district.

Table 15: Elk Populations and Objectives for Hunting District 281

Year	Total Elk	Bulls/100 Cows	Calves/100 Cows
2001	635	-	-
2003	665	17	-
2005	748	21	-
2008	726	-	-
2010[1]	488	4	34
2011	560	13	20
2012	705	6	19
2013	452	7	17
2014	651	14	21
Late Winter Count Objectives	500 to 700 elk	Greater than or equal to 15 bulls/100 cows	
[1]Poor flight conditions and timely likely resulted in an undercount of both total elk and bulls			

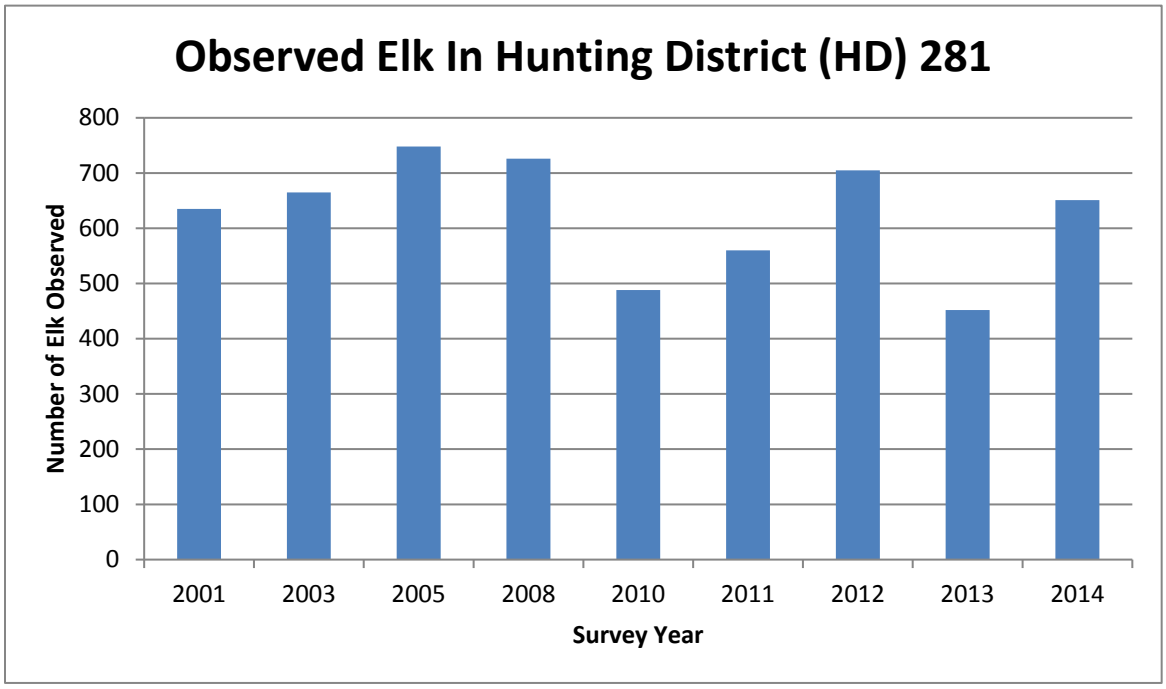

Figure 7: Numbers of Elk Observed in Hunting District 335 from 2005 through 2014

Exempting this project from Standards 3 and 4a, and hiding cover and thermal cover standards for management areas T-2 and T-3, should not affect the Forest's ability to realize the elk population

potential established in the Forest Plan. When the Forest Plan Record of Decision was signed in 1986, the selected alternative was E-1. Alternative E-1 established Forestwide elk population potential for summer and winter range. In 1986, the Forest Plan summer range elk potential was 6,300 elk; the winter range elk potential was 4,000 elk. By decade five, summer range elk potential in the Forest Plan was projected at approximately 6,200 elk and winter range elk potential at 3,200 elk (Forest Plan Record of Decision page 13, Forest Plan final environmental impact statement pages II/56-60). Based on aerial survey data collected by Montana Department of Fish, Wildlife, and Parks staff in 2014, there are over 15,036 elk Forestwide within those hunting districts that overlap with the Helena National Forest. Some of these hunting districts barely overlap with the Helena National Forest. Discounting those hunting districts, the total number of elk that have been observed on and around the Forest is 11,649; although this is probably an underestimate because elk that occur in the 'discounted' hunting districts do spend some time on the Forest. Nevertheless, this is well in excess of that estimated at the time the Forest Plan was crafted and also in excess of that predicted for decade five. While some of the elk in these hunting districts spend all or part of their time on non-Helena National Forest land, a considerable number of them, well in excess of 6,400, are part of the Helena National Forest population.

Furthermore, this exemption should not preclude the Forest's ability to achieve the goals and objectives as outlined in the Forest Plan. The goal, to "maintain and improve the habitat over time to support big game and other wildlife species" (USDA 1986, p. II/1) is being achieved through the retention of hiding cover elsewhere throughout the project area. Our objective, - "management will emphasize…the maintenance or enhancement of elk habitat..." (USDA 1986, p. II/4) is also being realized for the same reasons.

In summary, while this project may affect elk to some extent by removing hiding and thermal cover, the Forest would retain habitat components necessary to support the elk potential directed by the Forest Plan as evidenced by the current elk numbers Forestwide. We would also continue to achieve our objective of "ensuring that viable populations of existing…animal species are maintained" (USDA 1986, p. II/17) as evidenced by the number of elk that occur on the Forest.

Cumulative Effects of Other Forest Plan Amendments

Cumulative effects are the impacts on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, Federal or non-Federal. The cumulative effects analysis considers spatial and temporal boundaries, how past activities have contributed to the existing condition, and whether the ecosystem can accommodate additional effects.

This section addresses cumulative effects in two ways: those associated with site-specific project amendments and those associated with programmatic amendments. The effects of site-specific project amendments are limited in time and space; programmatic amendments provide direction that would be applied to future management activities (i.e. activities that take place after a programmatic decision).

The scale of analysis or the cumulative effects affected environment is the entire Forest.

Site-Specific Amendments

Existing Amendments

There are currently 29 Forest Plan amendments of which six have had implications on Big Game standards.

Amendment #7 Miller Mountain Hard Rock Mineral Exploration Project

This site-specific amendment exempts the Miller Mountain hard rock mineral exploration project (1993) from Forest Plan Big Game Standards 3 and 4a. Approximately 590 acres were exempted from these standards associated with the construction of new roads and drill sites. Most likely, these roads do not

provide hiding cover; however, they remain closed to all use. There were additional closures in Jimmy's Gulch, an area adjacent to this 1993 project. The corporation that originally conducted mineral explorations in the area is no longer active.

This project is located in Montana Department of Fish, Wildlife, and Parks hunting district 392. Elk trends have been increasing in hunting district 392 since 2005; percent of bulls per total observed has also been increasing since 2007 (Figure 8 and Figure 9). The decision to exempt this project from compliance with Standards 3 and 4a and the subsequent removal of 590 acres of cover does not appear to have negatively impacted elk numbers in this hunting district. Management challenges identified for this hunting district include public access and noxious weeds and not necessarily loss of cover (MFWP 2005, p. 249).

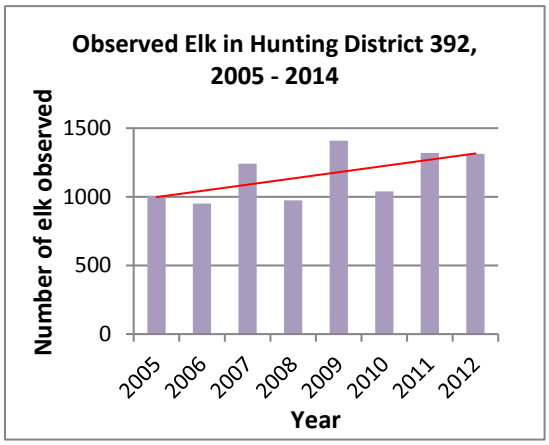

Figure 9: Observed elk in hunting district 392, 2005 to 2014. The red line indicates trend.

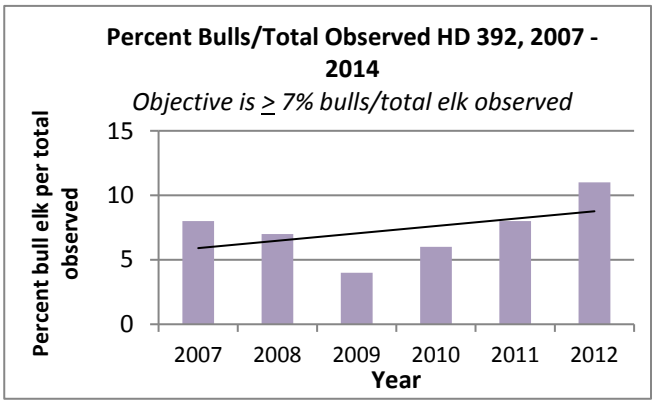

Figure 8: Percent bulls per total elk observed in hunting district 392, 2005 to 2014. The black line indicates trend.

Amendment #21 Jimtown Project

This site-specific amendment exempted the Jimtown Project (2001) from Big Game Standard 4a. The wildlife analysis concluded that the existing condition was not consistent with this standard. Effects associated with this project included the removal of approximately three percent of the hiding cover in the Hedges Mountain herd unit.

This project is also located in Montana Department of Fish, Wildlife, and Parks hunting district 392. The decision to exempt this project from Standard 4a and the subsequent removal of hiding cover does not appear to have negatively impacted elk numbers in this hunting district. This may be due to the fact that management challenges in this hunting district aren't necessarily related to loss of cover but rather to limited public access and noxious weeds.

Amendment #23 Cave Gulch Post-Fire Salvage Project

This site-specific amendment exempted the Cave Gulch Post-Fire Salvage Project from Big Game Standard 4a. The wildlife analysis for this project indicated that the existing condition was not consistent with Standard 4a. This was due in part to the loss of existing hiding cover from the Cave Gulch wildfire. Approximately 0.85 miles of temporary roads were built to implement the salvage sale and were subsequently decommissioned.

This project is also located in hunting district 392. As with the Miller Mountain Mine Exploration Project and the Jimtown Project, the impacts to elk as a result of the removal of hiding cover below Forest Plan thresholds appear minimal.

Amendment #26 Fuels Reduction and Hazardous Tree Removal Project

This site-specific amendment exempted the Fuels Reduction and Hazardous Tree Removal Project from Forest Plan Big Game Standards 3 and 4a. The wildlife analysis for this project concluded that the existing condition for Forest Plan Standard 3 is not met within 17 of the 27 elk herd units for hiding cover and none of the elk herd units meet Forest Plan Standard 3 for thermal cover. The existing condition for Forest Plan Standard 4a is not met within 22 of the 27 elk herd units. Implementation of the Decision did not result in any additional elk herd units being below these Forest Plan Standards. The Decision resulted in minimal reductions of hiding cover within those elk herd units where existing conditions were already below Forest Plan Standard 3; a one percent reduction in two elk herd units, and less than a one percent reduction in all other elk herd units. Twenty two elk herd units did not currently meet Forest Plan Standard 4a. The open road densities however were not a part of this decision.

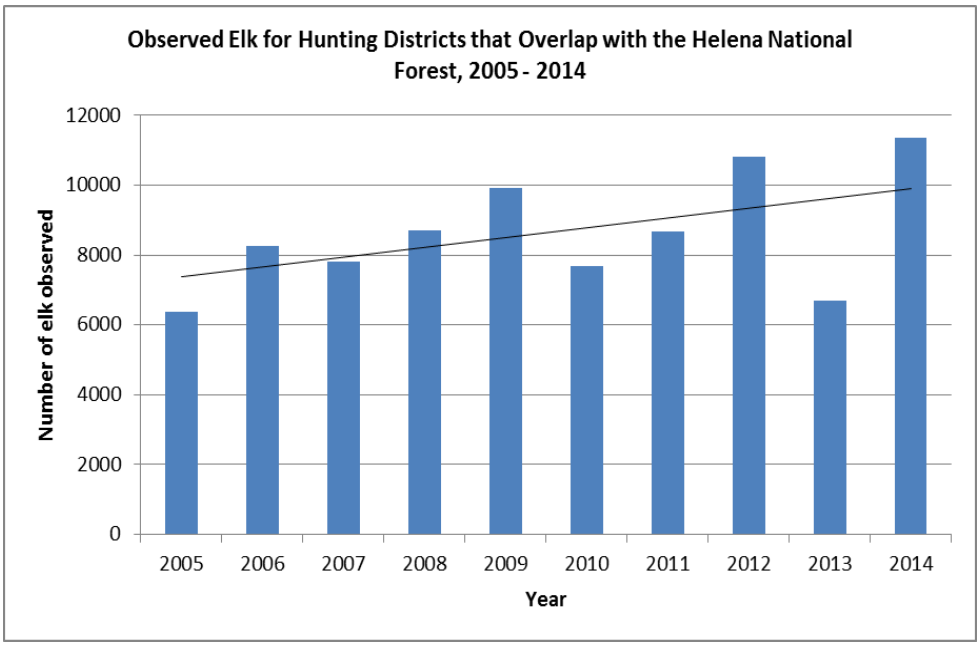

Figure 10: Observed elk in all Hunting Districts that overlap with the Forest 2005-2014. The black line indicates trend.

This project occurs within several hunting districts given that its scope is Forestwide. The trend in elk numbers continues to increase despite the fact that this decision resulted in several herd units dropping further below thresholds specified in Forest Plan standards (Figure 10). Management challenges in these hunting districts include limited public access, development, and loss of cover and security.

Amendment #28 Cabin Gulch Vegetation Treatment Project

This amendment exempts the Cabin Gulch Vegetation Treatment Project from the Forest Plan standards for hiding cover on summer range and the open road density/hiding cover ratio during the hunting season (Big Game Standards 3 and 4a respectively, USDA 1986, p. II/17). Overall, this project would affect elk habitat to a limited extent by removing cover within the affected elk herd units. Regardless of project implementation, this loss would occur naturally over the next few years due to extensive tree mortality and natural tree fall from the insect infestation. In addition, the selected treatments may be beneficial for elk over the current situation, as they could quicken the regeneration rate of new forests. The analysis concluded that through the life of the project and with the subsequent recovery of hiding cover over time, elk habitat would remain abundant and well distributed across the Forest. Approximately 2,313 acres of

hiding cover was analyzed for removal in the Cabin Creek herd unit which is a reduction of six percent from the existing condition. Approximately 190 acres of hiding cover was analyzed for removal in the North Fork herd unit which is less than a one percent reduction from the existing condition.

The Cabin Gulch Project Decision does not result in any increases in open road density during the hunting season. However, due to the removal of hiding cover within the Cabin Creek and North Fork EHUs and because both elk herd units are below Forest Plan Standard 4a in the existing condition, the Project Decision does not meet Standard 4a thresholds. Mitigation measures have been included from the Montana Cooperative Elk-Logging Study that would minimize project-related disturbances.

This project is located in hunting district 391. It is currently in the implementation phase. Elk numbers and the number of bull elk observed have been increasing since 2005 and 2007 respectively (Figure 11 and Figure 12). The management challenges in this hunting district include limited public access and noxious weeds; not necessarily reductions in cover (MFWP 2005, pp. 255-257).

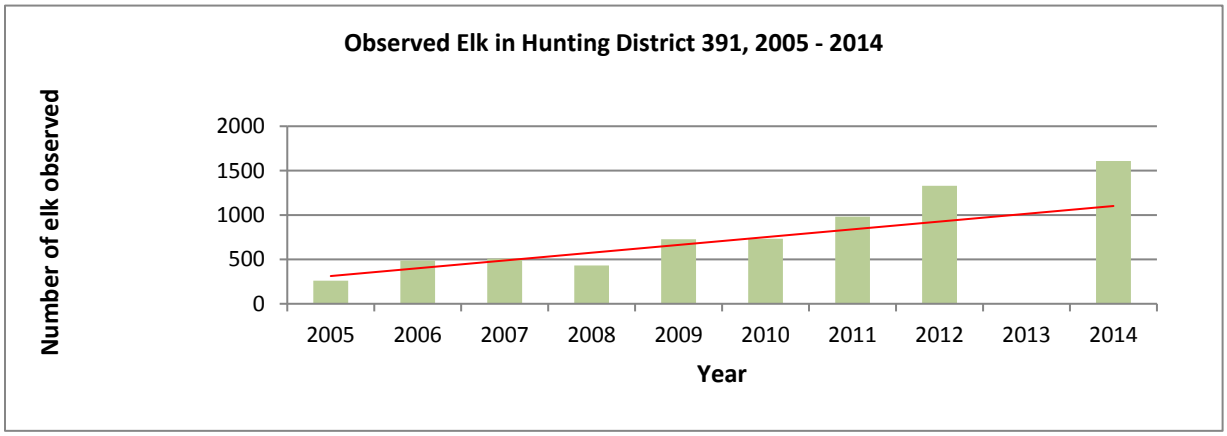

Figure 11: Observed elk in hunting district 391 2005-2014. The red line indicates trend.

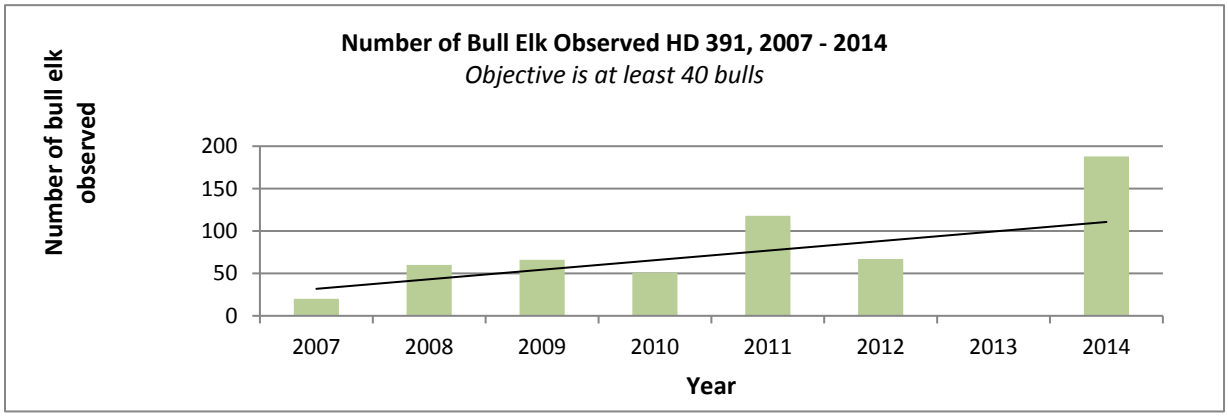

Figure 12: Number of bull elk observed in hunting district 391 2005-2014. The black line indicates trend.

Amendment #29 Red Mountain Flume/Chessman Reservoir Project

This amendment exempts the Red Mountain Flume/Chessman Reservoir Project from Forest Plan Standard 3 for hiding cover on summer range (Forest Plan p. II/17) for the Quartz Creek herd unit and from Forest Plan Standard 4a (Forest Plan p. II/17-18) for both the Black Mountain-Brooklyn Bridge and Quartz Creek herd units. The decision to exempt this project from Standard 3 for the Quartz Creek elk herd unit and 4a for both Black Mountain-Brooklyn Bridge and Quart Creek elk herd unit may affect elk to some extent due to the removal of hiding cover from these elk herd units. The project would treat approximately 490 acres, removing all dead trees and woody debris from an approximate 450 foot wide corridor, along the Red Mountain Flume and removing mostly dead trees and woody debris from a broad swath around Chessman Reservoir and its meadows. All hiding cover within the units, currently 434 acres (includes four acres from Jericho Mountain elk herd unit), would be lost. Approximately 0.5 mile of low-grade road would be constructed east of Chessman Reservoir: It would not be open to public vehicle use and it would be obliterated after the project. Regardless of project implementation, this loss would occur naturally over the next few years due to extensive tree mortality and natural tree fall associated with the mountain pine beetle infestation (Mitchell and Preisler 1998, Lewis and Hartley 2005, among others).

The Red Mountain Flume/Chessman Reservoir Project does not result in any increases in open road density during the hunting season. However, due to the removal of hiding cover within the Black Mountain – Brooklyn Bridge and Quartz Creek elk herd units and because both elk herd units are below Forest Plan Standard 4a in the existing condition, the project decision does not meet Standard 4a thresholds. Mitigation measures have been included from the Montana Cooperative Elk-Logging Study that would minimize project-related disturbances.

This project occurs within hunting district 335. It is currently being implemented. Elk numbers have been increasing since 2005 while the bull/cow ratio has remained relatively static (Figure 13 and Figure 14). Management challenges in this hunting district include housing development and mining activity, extensive motorized use, and wolf establishment (MFWP 2005, pp. 190-193).

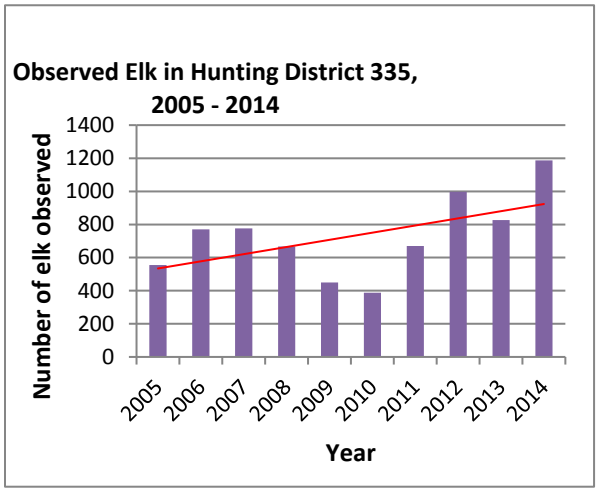

Figure 14: Observed elk in hunting district 335 2005-2014. The red line indicates trend.

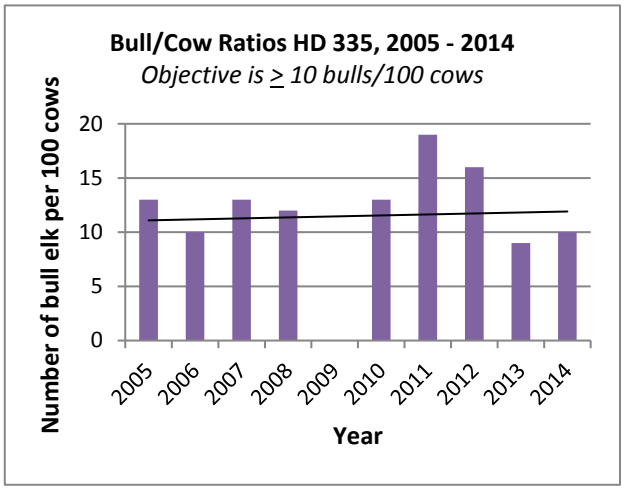

Figure 13: Bull/cow ratios in hunting district 335 2005-2014. The black line indicates trend.

Proposed Amendments

Telegraph Vegetation Project

The Telegraph Vegetation Project area is approximately 23,669 acres in size and is located roughly 15 miles southwest of Helena, and five miles south from Elliston, Montana, in the Little Blackfoot drainage west of the Continental Divide. The purpose of the project is to be responsive to the mountain pine beetle outbreak in this area, recover economic value of dead and dying trees, promote desirable regeneration, reduce fuels and the risk of wildfire, and maintain diverse wildlife habitats. In order to meet the purpose and need, a site-specific amendment exempting the project from Forest Plan Standard Big Game Standards 3 and 4a may be required. This project is currently in the analysis phase.

This project occurs within hunting district 215 and is currently being evaluated for environmental effects. Elk numbers have been increasing since 2005 while the bull/cow ratio has been declining (Figure 15 and Figure 16). Management challenges in this hunting district include housing development and mining activity, access, extensive motorized use, and wolf establishment (MFWP 2005, pp. 190-193).

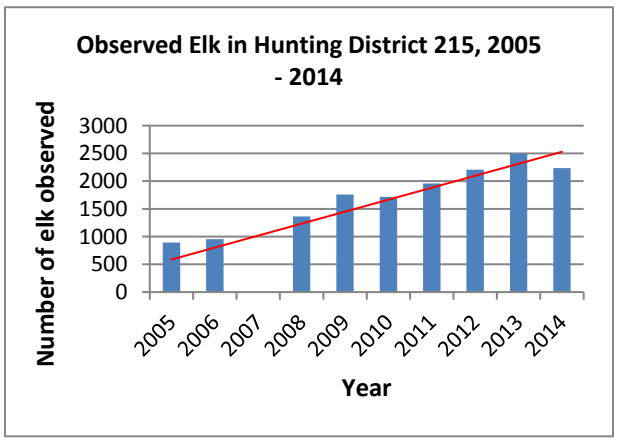

Figure 16: Observed elk in hunting district 215 2005-2014. The red line indicates trend.

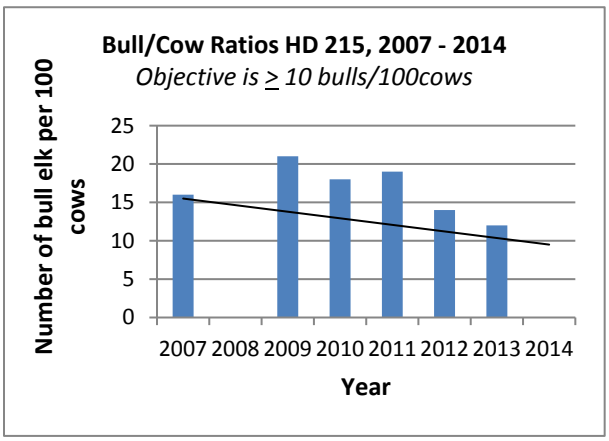

Figure 15: Bull/cow ratios in hunting district 215 2005-2014. The black line indicates trend.

Tenmile South Helena Project

The Tenmile – South Helena Project encompasses approximately 49,500 acres of National Forest System land west and south of Helena, Montana. The project area is located within the Upper Tenmile watershed, the primary source of municipal water for the City of Helena, and extends east through Colorado Gulch and the South Hills area of Helena, Montana. The purpose of the project is to maintain consistent quantity and quality of water within the municipal watershed and improve conditions for public and firefighter safety across the landscape in the event of a wildfire. In order to achieve this purpose, there is a need to create a mosaic of vegetation and fuel structure more resilient to disturbance which would provide for safer, more effective fire suppression actions. Site-specific amendments to the Helena National Forest Plan may be necessary in order to meet the project's purpose and need. Possible amendments may be needed for Forest Plan Standards 3, 4a, and 6 as well as for those management area standards listed in below.

- H1 - Maintain adequate elk thermal and hiding cover adjacent to forage areas as determined by a wildlife biologist. Generally, this means providing at least 25 percent thermal cover on identified winter range.
- H2 - Maintain adequate elk thermal and hiding cover adjacent to forage areas as determined by a wildlife biologist. Generally, this means providing at least 25 percent thermal cover on identified winter range.
- L2 - Maintain adequate elk thermal and hiding cover adjacent to forage areas as determined by a wildlife biologist. Generally, this means providing at least 25 percent thermal cover on identified winter range.
- T-3 - Maintain a minimum of 35 percent hiding cover for big game. Maintain thermal cover adjacent to forage areas.
- T5 - Maintain adequate thermal and hiding cover adjacent to forage areas provided timber harvest volumes are no significantly reduced over the rotation period.

Specific design criteria and mitigations would be included in order to minimize effects to elk during project implementation. These include: restricting public use of temporary roads, prohibiting logging operations during the first two weeks of the general rifle season to maintain elk habitat capability, and confining logging to a single drainage at a time with all work completed in the shortest time frame possible.

This project also occurs within hunting district 335. Elk numbers have been increasing since 2005 while the bull/cow ratio has remained relatively static. Management challenges in this hunting district include housing development and mining activity, extensive motorized use, and wolf establishment (MFWP 2005, pp. 190-193). See Figure 13 and Figure 14District 335, above).

Site-Specific Amendment Analysis

Montana Fish, Wildlife and Parks elk population management focuses on maintaining numbers well above population viability thresholds, protecting certain sex and age classes from over-harvest, providing public hunting opportunity, and attempting to balance elk distribution across public and private lands. The Forest Service strives to complement Montana Fish, Wildlife and Park's efforts through management of elk habitat on National Forest System lands. However, within the multiple use mandate of the Forest Service, management for elk is only one of many considerations on National Forest System lands. Other multiple use considerations may be favored over elk in order to achieve management area goals of the Forest Plan. If these considerations conflict with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard (USDA 1986, p. II/14). Such has been the case with the site-specific amendments described here. However, despite these amendments and their associated impacts to cover (thermal and hiding), bull survival as measured by Montana Fish, Wildlife and Parks, is at objectives across a majority of the Forest (Figure 17). This is not to suggest that cover does not play a role in elk population dynamics. Rather, it indicates that cover alone may not be a predicator of elk numbers (Lyon and Canfield 1991; Unsworth and Kuck 1991; Lyon and Christensen 1992; Christensen et al. 1993, Stubblefield et al. 2006 p. 1068, Montgomery et al. 2013, p. 322, Proffitt et al. 2013).

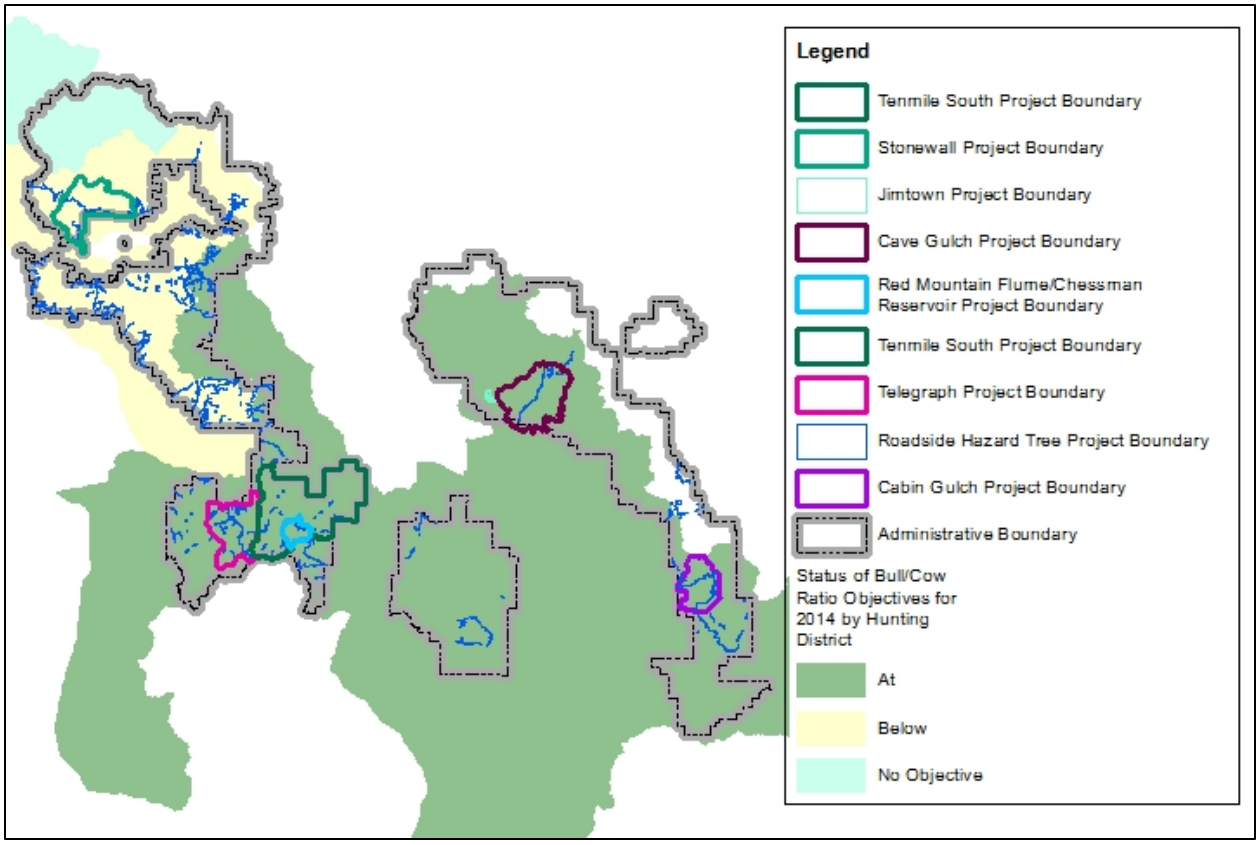

Figure 17: Montana Fish, Wildlife and Parks bull survival objectives and projects for which a site-specific amendment has been completed or is proposed

Total numbers of hunters, elk harvested, and bull elk harvested has remained relatively stable in those hunting districts that overlap with the Helena National Forest suggesting that the reductions in cover associated with these site-specific amendments may be so minor as to not influence hunter numbers and harvest success (Figure 18).

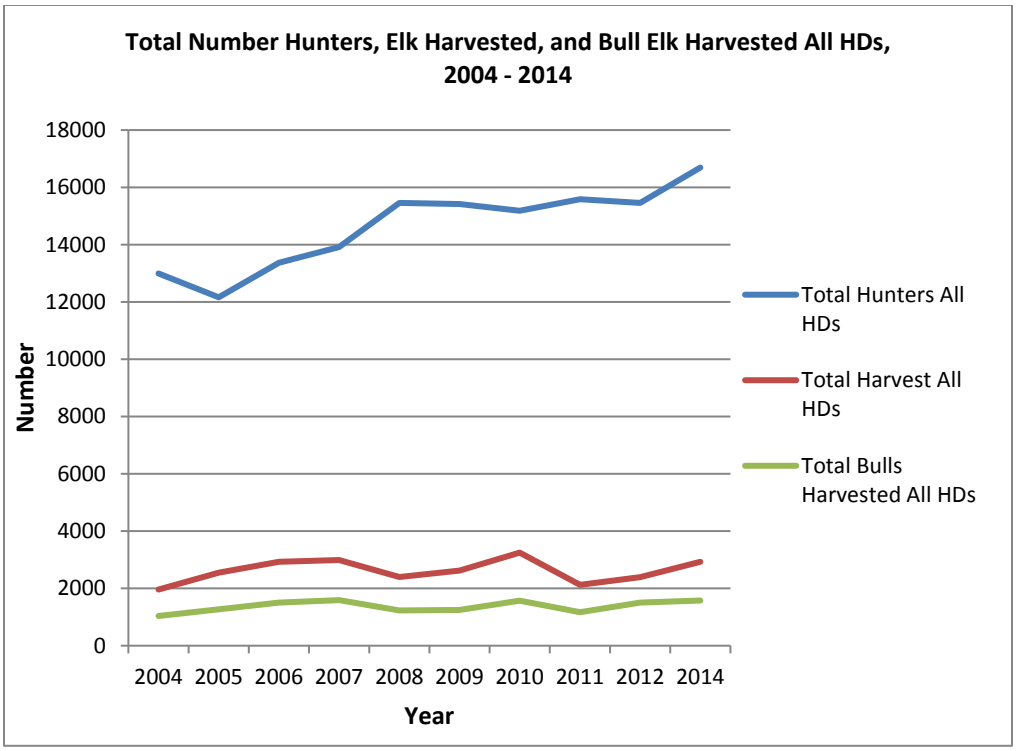

Figure 18: Total number hunters, elk harvested, and bull elk harvested in those hunting districts that overlap the Forest, 2004 – 2014

A variety of factors influence elk distribution and abundance in addition to cover management. The lack of public access to hunt big game on private lands and the resulting differences in relative hunting pressure can play a major role in elk population dynamics and distribution. Human disturbance and potential for displacement of big game animals is not restricted to the five-week rifle season currently in place in Montana. Because archery hunting has increased significantly in popularity, there has been a noted shift in some cases of elk moving to private land, as a result of displacement during the archery season. Human disturbance may also influence elk habitat use and distribution during time periods outside of the hunting season. In addition, predators (generally mountain lions, wolves, and bears) also influence elk population dynamics and distribution in some areas.

Elk are fairly resilient animals. Ernest Thompson Seton (as cited in RMEF 1997) postulated that 10 million elk lived in North America prior to European settlement. By 1907, there were less than 100,000. In Montana, elk were widely distributed during the era of exploration. As Montana was settled, elk began to decline were completely eliminated from eastern Montana by the early 1900s. Today, elk are abundant; their ability to withstand near extirpation at the turn of the last century strongly suggests that they can withstand temporary declines in available cover associated with the site-specific amendments described herein.

Programmatic Amendments

Existing Amendments

Northern Rockies Lynx Management Direction

The Northern Rockies Lynx Management Direction was amended to National Forest Plans in Montana and parts of Idaho, Wyoming, and Utah in 2007. The Northern Rockies Lynx Management Direction incorporates management direction that conserves and promotes recovery of Canada lynx, by reducing or eliminating adverse effects from land management activities on National Forest System lands, while

preserving the overall multiple use direction in existing plans. Some of the Northern Rockies Lynx Management Direction standards may benefit elk and other big game by retaining winter snowshoe hare habitat which may provide cover, reducing disturbance associated with mineral development, and reducing habitat fragmentation. (USDA 2007, p. 210)

Divide Travel Plan

The Divide Travel Plan Programmatic Amendment Decision has been signed. The programmatic amendment to standard 4a is as follows:

Standard

Road management will be implemented to maintain or improve big game security and hunting opportunity.

Road management will also be implemented to maintain or improve big game intermittent refuge areas.

This standard applies only to the National Forest System lands within those portions of the following elk herd units that are within the Helena Ranger District, Helena National Forest administrative boundary – Black Mountain-Brooklyn Bridge, Greenhorn, Jericho, Little Prickly Pear-Ophir, Quartz Creek, and Spotted Dog-Little Blackfoot.

Public Motorized Use: Public motorized use will be managed during the hunting season (from September 1st to December 1st) to maintain elk security and intermittent refuge areas at the following levels:

Percentage of Elk Security and Intermittent Refuge Areas within that Portion of an Elk Herd Unit within the Helena Ranger District Administrative Boundary		
Herd Unit	***Security percent***	***Intermittent Refuge Area percent***
Black Mountain–Brooklyn Bridge	*16*	*5*
Greenhorn	*30*	*1*
Jericho	*17*	*0*
Spotted Dog – Little Blackfoot	*41*	*2*
Little Prickly Pear—Ophir	*29*	*2*
Quartz	*0*	*6*

Other Use: Administrative use for travel on routes that are closed to public motorized use is permitted subject to existing authorization procedures (i.e. variances approved by line officers are required prior to use of motorized routes closed to the public).

Temporary reductions associated with management activities in security blocks and intermittent refuge areas between September 1st and December 1st are allowed as long as impacts to elk or elk security are mitigated at the project level. Temporary reductions will be evaluated and effects analyzed (including cumulative effects) at the project level and reviewed by a wildlife biologist. It is at this scale and time when project design features and/or mitigations would be applied to ensure that impacts to elk or elk security during hunting season are addressed and reduced during implementation of the project. Temporary reductions are managed at the project scale and at the herd unit (or across herd units where security blocks cross into one or more herd units) to ensure big game security during the September 1st to December 1st hunting season is maintained or improved over the long term.

Permanent changes (e.g. reduction in overall secure acres) are allowed in elk security areas as long as the overall percent of elk security in a herd unit does not decrease and a site-specific analysis indicates that elk are unlikely to be negatively impacted by that change.

Permanent changes are allowed in intermittent refuge areas as long as the overall percent of intermittent areas in a herd unit does not decrease and a site-specific analysis indicates that elk are unlikely to be negatively impacted by that change or if the decrease is due to those acres becoming part of a security area.

Exceptions to the Standard

Emergency situations are not subject to this standard.

Standard Definitions

Security is defined as a proportion of an elk herd unit within the administrative boundary of the Helena Ranger District that consists of an area of at least 1,000 acres in size that is at least ½ mile from a motorized route open to the public between September 1st and December 1st. Security blocks are adjusted for constrictions less than or equal to ½ mile in width. Security is calculated across all ownerships within the administrative boundary.

Intermittent Refuge Areas are defined as those areas at least 250 acres in size and less than 1,000 acres in size that are greater than or equal to ½ mile from a motorized route open to the public between September 1st and December 1st. Intermittent Refuge Areas are adjusted for constrictions less than or equal to ½ mile in width. Intermittent Refuge Areas are calculated across all ownerships within the administrative boundary.

Administrative use for travel on motorized routes is defined as vehicle use associated with management activities or projects on National Forest land administered by the Forest Service or under authorization of the Forest Service. Management activities include but are not limited to, law enforcement, timber harvest, reforestation, cultural treatments, prescribed fire, watershed restoration, wildlife and fish habitat improvement, private land access, allotment management activities, and mineral exploration and development that occur on National Forest land administered by the Forest Service or under authorization of the Forest Service.

Mitigation is defined as design elements and/or constraints applied to project level activities that reduce project impacts on elk or elk security. Mitigation measures may include but are not limited to one or more of the following: timing restrictions of activities in security blocks, confining activities to one security block at a time, completing as much of the preparatory work as possible prior to the hunting season, reducing the size/acres/intensity/magnitude of the activity, allowing activities that benefit elk (particularly in management areas with a wildlife emphasis), limiting activities to one season, temporarily closing roads open to the public to compensate for the activity, etc.

Guidelines

Cover should be distributed in a manner that mimics or approximates a natural range of variation. Natural range of variation is generally defined as the spatial and temporal variation in ecosystem characteristics under historic disturbance regimes during a reference period. A reference period should be sufficiently long to include the full range of variation produced by dominant natural disturbance regimes. Fire, wind, and insect/disease outbreaks are examples of disturbances.

Subject to Guideline #1, provide cover, if available, between elk security areas to maintain habitat connectivity and facilitate seasonal movement. Saddles, low divides, and heads of drainages are examples of important landscape features within which cover should be retained when possible in order to provide habitat connectivity.

Subject to Guideline #1, vegetation management projects should be planned to recruit or improve cover, where such habitat is limited or not available.

Subject to Guideline #1, provide cover, if available, in elk security areas to maintain and/or improve elk security in areas known to be used by elk or that have the potential to be used by elk. The upper third of the slope in moderate to large drainages and lower third of slope in drainage heads are examples of areas that have the potential to be used by elk.

Frequent, continuous dense cover, if available, should be provided adjacent to system roads within and between elk security areas to maintain habitat connectivity and elk security. Dense cover may include trees, shrubs, and/or topography among other factors and is site-specific in nature; as such it is purposefully not defined here.

Design management activities to avoid reducing hiding cover where recruitment of hiding cover is an objective.

Guidelines Definitions

Cover is defined as vegetation that provides elk with a means of escape from the threat of predation or harassment and reduces the chance of detection. Here, the definition of cover may include hiding cover, screening cover, or concealment cover. Hiding cover is defined in the Helena National Forest Plan as either (1) vegetation capable of hiding 90 percent of an elk at 200 feet or (2) a stand of coniferous trees having a crown closure of greater than 40 percent or concealment cover which consists of vegetation dense enough to aid animals in escaping from predation or harassment. Screening cover may include conifers and other vegetation that afford longer sight distances then hiding cover but that can obstruct a clear view toward standing or moving elk. Concealment cover may include small conifers, shrubs, boulders, or dead fall that can hide calves/fawns and bedded adults and may service to impede hunter movement. Concealment cover is generally more open than hiding cover.

Habitat connectivity consists of an adequate amount of hiding or screening cover arranged in a way that allows elk to move around.

System Road is defined as a road that is part of the Forest development transportation system.

Goal

Maintain or, where opportunities arise, improve big game security in those portions of an elk herd unit within the administrative boundary of the Helena Ranger District during the September 1st to December 1st hunting season where security is less than 50 percent. Maintain big game security in those portions of an elk herd unit within the administrative boundary of the Helena Ranger District between September 1st and December 1st where security is greater than or equal to 50 percent.

Proposed Amendments

Blackfoot Non-Winter Travel Plan

The proposed programmatic amendment for the Blackfoot Non-Winter Travel Plan is as follows:

Road management will be implemented to maintain or improve big game security and hunting opportunity.

This standard applies only to the National Forest System lands within those portions of an elk herd unit that are within the Lincoln Ranger District, Helena National Forest administrative boundary.

Public Motorized Use: Public motorized use will be managed during the hunting season (from September 1st to December 1st) to maintain elk security at the following levels:

Percentage of Elk Security within that Portion of an Elk Herd Unit within the Lincoln Ranger District Administrative Boundary by Travel Plan Alternative					*Selected Alt (pending)*
Herd Unit	*Alt 1 Security percent*	*Alt 2 Security percent*	*Alt 3 Security percent*	*Alt 4 Security percent*	
Arrastra	*57*	*55*	*57*	*57*	*57*
Beaver Creek	*41*	*47*	*52*	*48*	*48*
Flesher Pass	*27*	*32*	*49*	*42*	*42*
Keep Cool	*36*	*46*	*60*	*52*	*51*
Landers	*84*	*84*	*84*	*84*	*83*
Nevada	*44*	*47*	*59*	*52*	*63*
Ogden	*21*	*23*	*41*	*24*	*26*
Poorman	*12*	*15*	*40*	*32*	*37*

Other Use: Administrative use for travel on routes that are closed to public motorized use is permitted subject to existing authorization procedures (i.e. variances approved by line officers are required prior to use of motorized routes closed to the public).

Temporary reductions associated with management activities in security blocks between September 1st and December 1st are allowed as long as impacts to elk or elk security are mitigated at the project level. Temporary reductions will be evaluated and effects analyzed (including cumulative effects) at the project level and reviewed by a journey level wildlife biologist. It is at this scale and time when project design features and/or mitigations would be applied to ensure that impacts to elk or elk security during hunting season are addressed and reduced over the implementation timeline of the project. Temporary reductions are managed at the project scale and at the herd unit (or across herd units where security blocks cross into one or more herd units) to ensure big game security during the September 1st to December 1st hunting season is maintained or improved over the long term.

Security is defined as a proportion of an elk herd unit within the administrative boundary of the Lincoln Ranger District that consists of an area of at least 1,000 acres in size that is at least ½ mile from a motorized route open to the public between September 1st and December 1st. Security blocks do not include constrictions less than or equal to ½ mile in width. Security is calculated across all ownerships within the administrative boundary.

Forest Plan Amendment to incorporate relevant direction from the Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy

The purpose of the amendment is to incorporate relevant habitat-related direction from the Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy into the forest plans for the Helena, Kootenai, Lewis and Clark and Lolo National Forests (also referred to as “amendment forests”) to have an integrated set of plan direction (referred to as plan components from this point forward) consistent across the national forests that are a part of the Northern Continental Divide Ecosystem.

Under the Endangered Species Act of 1973, federal agencies are directed to use their authorities to seek to conserve endangered and threatened species. The amendment forests’ associated plans (Helena National Forest, approved by the Regional Forester in 1986), have management direction related to grizzly bear habitat, to support recovery of the threatened grizzly bear.

Since the development of this planning direction, the grizzly bear population in the Northern Continental Divide Ecosystem has met and exceeded recovery goals. In particular, habitat conditions and management on the national forests have contributed importantly to the increased population size and improved status of the grizzly bear across the Northern Continental Divide Ecosystem. To support a

healthy, recovered grizzly population the Forest Services' continued, effective management of the Grizzly Bear Conservation Strategy grizzly bear's habitat is necessary.

In 2013, the U.S. Fish and Wildlife Service announced the availability of a draft Grizzly Bear Conservation Strategy for the Northern Continental Divide Ecosystem population for public review and input. When finalized, the Grizzly Bear Conservation Strategy would become the post-delisting management plan for the Northern Continental Divide Ecosystem grizzly bears and their habitat. By incorporating the relevant habitat-related direction from the Grizzly Bear Conservation Strategy into forest plans, the proposed amendments would demonstrate to the U.S. Fish and Wildlife Service that adequate regulatory mechanisms exist on national forests within the Northern Continental Divide Ecosystem to support delisting this grizzly population. Thus, the amendment forests need to amend their forest plans and incorporate the relevant desired conditions, standards, guidelines, and monitoring items related to habitat management on National Forest System lands in the Northern Continental Divide Ecosystem and contained in the Grizzly Bear Conservation Strategy to show that the amendment forests have adequate regulatory mechanisms in place to support a recovered grizzly bear population.

The proposed action (Grizzly Bear Conservation Strategy) contains numerous standards and guidelines governing resource management on the Forest. These can be found at the following link, pages 5 to 16:

(http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3831237.pdf

Some of these standards and guidelines have little to no applicability to elk, i.e. food storage orders, special use permits for apiaries. The remaining standards and guidelines, if adopted, should overall benefit elk and their habitat as follows. Access and recreation standards and guidelines limit motorized access and developed recreation sites within the Northern Continental Divide Ecosystem. There are provisions however for short term temporary increases in use associated with projects, existing mineral rights, or access to firewood. Terrestrial ecosystem guidelines provide timing considerations in the Northern Continental Divide Ecosystem (i.e. prohibiting logging activities during the spring in key grizzly bear habitat) that would provide additional protection for elk primarily during the calving period. Grazing standards and guidelines limits grazing in the Northern Continental Divide Ecosystem to existing allotments (except for purposes of weed control) which means that forage availability for elk should remain constant, all things being equal. Energy and mineral standards and guidelines include requirements to mitigate impacts associated with human disturbance and impacts to vegetation.

This amendment, although not specific to elk, should guide design elements for future projects that could benefit elk and their habitat by minimizing management related disturbances and maintaining or enhancing available forage.

Cumulative Effects Conclusions

All of the site-specific amendments described above have been or will be site-specific in time and space; as such, effects to elk cover are transitory. None of the past amendments has resulted in significant impacts to elk; nor should the proposed site-specific amendments significantly impact elk. Cumulatively, effects to elk hiding and thermal cover from this and other site-specific Forest Plan amendments should not compromise the Forest's ability to provide habitat potential to meet Forest Plan elk population goals or to contribute to the State's elk management objectives. Elk will continue to be abundant across the Forest as evidenced by the increases in elk numbers since the incipience of the Forest Plan.

The past and proposed programmatic amendments (i.e. Northern Rockies Lynx Management Direction, Blackfoot Non-winter and Divide Travel Plan Amendments, Grizzly bear amendment) should provide standards and/or guidelines that, when implemented, could result in habitat improvements for elk.

The big game standards found in the Helena National Forest Plan are based on state population goals outlined in *The Northern Regional Plan* (USDA 1981, pp. 4-16 and B-3). The Montana goals were derived from the *1978 Montana Statewide Comprehensive Outdoor Recreation Plan* (SCORP 1978). Big

game goals and objectives embodied in the Montana plan included maintaining *"an available supply of big game to meet demand for all types of big game oriented recreation while insuring the protection and perpetuation of all big game species and their ecosystems"* (Ibid, p. 3). Statewide goals for elk in particular included protecting and perpetuating *"elk and their habitat and to increase the supply of available, harvestable elk to meet demands for hunting and non-hunting recreation"* (Ibid, p. 35). The Montana Plan delineated goals and objectives by the respective 'Fish and Game Regions', the same regions in place today.

According to the *Northern Regional Plan* there were approximately 70,000 elk on the National Forests in Montana around 1981 (USDA 1981, p. 4-16 Table IV-4). State population goals projected for 1995 were intended to satisfy the growing demand for hunting and aesthetic purposes. The *Northern Regional Plan* identified desired population goals by State (*Ibid*, p. 4-17 Table IV-5) and National Forest based on those statewide goals *(Ibid*, p. B-3 Table B-3). The disaggregated total for the Helena National Forest was 6,400 by year 2000.

The Helena National Forest is located within several hunting districts identified by Montana Fish, Wildlife and Parks. The total number of elk that have been observed in these hunting districts through the 2014 aerial surveys is 15,036 (Montana Fish, Wildlife and Parks aerial survey data). Some of these hunting districts barely overlap with the Helena National Forest. Discounting those hunting districts, the total number of elk that have been observed on and around the Forest is 11,649, although this is probably an underestimate because elk that occur in the discounted hunting districts do spend some time on the Forest. Nevertheless, the number of elk associated with the Helena National Forest is well in excess of the 6,400 population target identified in the Helena National Forest Plan (USDA 1986, p. V/5).

Elk should continue to be abundant across the Forest as evidenced by the increases in elk numbers since the Forest Plan was adopted in 1986. Elk numbers have been increasing across the west and in Montana since the early to mid-1900s. Statewide, post-season elk numbers increased from 8,000 in 1922 to 55,000 in 1978 to about 160,000 in 2004 (MFWP 2005 pages 4-5). Thus, there are no viability concerns for Rocky Mountain elk in Montana or on the Helena National Forest. This is supported by their global status of 'G5' and the statewide status of 'S5' which are both defined as "common, widespread, and abundant…"

This site-specific amendment should have little cumulative long-term impacts to the long-term relationship with multiple-use goods and services or have a substantive impact on the land management plan or its resources when considered with site-specific amendments 7, 21, 23, 26, 28 and 29.

NFMA Significance/Non-Significance Finding

The National Forest Management Act provides that forest plans may be amended in any manner, but if the management direction results in a significant change in the plan, additional procedures must be followed.

In April 2012, the Forest Service adopted new planning regulations at 36 Code of Federal Regulations 219, Subpart A and Subpart B, which replaced the final 2000 land management planning rule (2000 rule) as reinstated in the Code of Federal Regulations on December 18, 2009 (74 FR 67062). The 2012 rule includes a transition period during which plan amendments may be initiated under the provisions of the prior planning regulation for three years after May 9, 2012 and may be completed and approved under those provisions. This amendment is being completed under the requirements of the 1982 regulations. It is, however, subject to the objection process in 36 Code of Federal Regulations 219 Subpart B (at 219.59(b)).

The 1982 regulations at 219.10(f) require the agency to determine whether or not a proposed amendment would result in a significant change in the plan. If the change resulting from the proposed amendment is determined to be significant, the same procedure as that required for development and approval of a plan

shall be followed. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, then the agency may implement the amendment following appropriate public notification and completion of the National Environmental Policy Act procedures.

Forest Service Manual section 1926.5 identifies factors to consider in determining whether an amendment is significant or non-significant for those plans using planning regulations in place before November 9, 2000.

Table 16: Factors for Consideration to Determine Amendment Significance

Changes to the Land Management Plan That are Not Significant	Management Standards 3 and 4a and Management Area T-2 and T-3 Exceptions
1. Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.	This site specific amendment is consistent with the goals and objectives of the Forest Plan, including Forestwide goals to maintain and improve the habitat over time to support big game and other wildlife species. (Forest Plan page II/1). Effects to habitat are limited and impact a small portion of the overall Forest habitat for big game.
2. Adjustments of management area boundaries of management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.	The amendment does not adjust management area boundaries or management prescriptions.
3. Minor changes in standards and guidelines.	The amendment is a one-time, site-specific and project-specific exception for the application of Standards 3 and 4a in the Beaver Creek – Lincoln and Keep Cool Creek herd units and from Management Area T-2 standards for Thermal Cover and Hiding Cover in openings adjacent to harvest and Management Area T-3 standards for Hiding Cover and Hiding Cover in openings adjacent to harvest. Exempting this project from the standards is not expected to impact overall elk population levels.
4. Opportunities for additional projects or activities that will contribute to achievement of the management prescription.	This site-specific amendment is consistent with the six Management Area's (MAs) goals, standards and practices. The Decision would treat acres in the MAs as follows: M-1 (1,901 acres), T-1 (711 acres), T-2 (786 acres), T-3 (652 acres), T-4 (483 acres) and W-1 (494 acres). Effects, as described in this amendment with further details in the final environmental impact statement and *Wildlife Resource Report and Biological Evaluation*, are limited in geographic scope and carry minimal impacts to elk locally and toward the overall Forestwide perspective as described above under Cumulative Effects of Other Forest Plan Amendments and reasonably foreseeable actions.

This site-specific amendment would not alter the long-term relationship between levels of multiple-use goods and services originally projected in the Forest Plan for wildlife habitat, Allowable sale quantity, or other resource outputs, nor does it have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period.

Based on consideration of the four factors identified in the Forest Service Manual, 1926.51, and considering the Forest Plan in its entirety, exempting this project from Standards 3 and 4a of the Helena National Forest Plan and Management Area T-2 and T-3 thermal and hiding cover standards would not be a significant change under National Forest Management Act to the Helena Forest Plan. This amendment is fully consistent with, but further refines and clarifies the means to achieve, current Forest Plan goals and objectives.

Conclusions

The reduction in canopy cover combined with site preparation would increase herbaceous and woody vegetation and elk forage for 10 to 20 years, although this would decline over time (Rapp 2006, Wisdom et al 2005, Hayden et al 2008). The availability of forage for elk would depend on its proximity to cover and generally the highest elk use would occur within approximately 300 to 500 feet of cover, with use decreasing with increasing distance from edges/cover (Thompson 1988, Wisdom et al. 2005).

Several studies have been conducted that describe an optimum cover/forage ratio. For example, Black et al. (1976, p. 12) define optimum habitat as 40 percent cover, 60 percent forage (although, the authors state that the description of optimum cover as 40 percent of an area is based on an average (Ibid p. 30). They even suggest that a reduction in cover may be appropriate to increase elk use in an area (until, of course, cover becomes limiting) particularly if forage is limiting (Ibid p. 20). The authors also predict that in some landtypes, cover can be reduced below 40 percent without a subsequent decline in elk use of that area [Ibid, pp. 20-27).

As described in the Affected Environment in the final environmental impact statement (p. 327), forage is limiting in the project area except in the Snow Talon Fire perimeter and now in the Sucker Creek and Klondike Fire perimeters. The forage created as a result of the Snow Talon Fire is of limited value due to the absence of cover. The recent Sucker Creek and Klondike Fires burned in a mosaic fashion resulting in a mix of forage and cover. Forage that would be created through the Stonewall project would be of the configuration (i.e. cover and forage intermixed) to be beneficial to elk. Design elements from the ‘Coordinating Elk and Timber Management’ report (Lyon et al. 1985 and USDA 1986, appendix C) are in place to ensure that forage produced through timber harvest is available to elk.

Overall, this project may affect elk to some extent by removing hiding and thermal cover. Regardless of project implementation, this loss will occur naturally over the next few years due to extensive tree mortality and natural tree fall from the insect infestation. However, through the life of this project and with the subsequent recovery of hiding cover over time, elk habitat should remain abundant and well distributed across the Forest. It is anticipated that the Forest would retain habitat components necessary to maintain a viable and huntable elk population. However, while habitat (e.g. hiding cover) is important to the long term viability of elk populations, elk populations and their viability are more likely to be controlled by harvest than by limits in cover (Unsworth et al. 1993, Bender and Miller 1999, Biederbeck et al. 2001, Conard et al. 2012).

Furthermore, implementation of this project, and others for which Forest Plan amendments have been or could be applied, should not impede the ability of the Forest to maintain and/or improve big game security while providing for an extended hunting season the intent of Standard 4a. The metrics used by Montana Fish, Wildlife and Parks to determine if elk objectives are being met indicate that for the most part the hunting districts that overlap with the Forest are at or above Montana Fish, Wildlife and Parks objectives (Table 17).

Table 17: Montana Fish, Wildlife and Parks bull elk population objectives and recent trend data

Hunting District	Population Objectives Based on Aerial Surveys Post-Harvest (MFWP 2005)	Recent Trend Data (Year of Data)	Summary
215	Greater than 10 bulls/100 cows	12 bulls/100 cows (2013)	Meets objectives. Management challenges in this hunting district include development, access, and predation. Cover has not been identified as an issue (MFWP 2005, p. 190)
280	No specific objective; tied to 280	No specific data	Harvest objectives are based on elk numbers in adjacent hunting districts. See discussion below (hunting district 281) for management challenges in this hunting district.
281	15 bulls/100 cows or 8 percent bulls/total elk observed	14 bulls/100 cows (2014)	Slightly below objectives; Management challenges in this hunting district include access, disposition of Plum Creek Timber lands, predation, and habitat conditions related to forage availability (MFWP 2005, pp. 113-115) *"Many segments of the elk populations are influenced by the successional stages of vegetation in the wilderness and by roadless habitats. Much of this area is not at a successional stage of vegetation that is conducive to producing abundant forage and dense elk populations."* Cover has not been identified as an issue.
293	10 bulls/100 cows	5 bulls/100 cows (2014)	Below objectives. Management challenges in this hunting district include development, access, noxious weeds, predation, and elk security in terms of cover and road densities (MFWP 2005, pp. 197-198).
335	Greater than 10 bulls/100 cows	10 bulls/100 cows (2014)	Long term average is 13 bulls/100 cows. Management challenges in this hunting district include development, access, and predation. Cover has not been identified as an issue. See discussion under *Rationale*.
339	15 bulls/100 cows	38 bulls/100 cows (2014)	Above objectives. Management challenges in this hunting district include development, access, noxious weeds, predation, and elk security in terms of cover and road densities (MFWP 2005, pp. 197-198).
343	10 bulls/100 cows	14 bulls/100 cows (2014)	Meets objectives. Management challenges in this hunting district include development, access, noxious weeds, predation, and elk security in terms of cover and road densities (MFWP 2005, pp. 197-198).
380	15 bulls/100 cows or 10 percent antlered bulls/total elk observed	3 percent antlered bulls/total elk observed (2014)	Below objectives; according to the 2013 aerial survey report some elk may have been missed during the survey. Also wolf

Hunting District	Population Objectives Based on Aerial Surveys Post-Harvest (MFWP 2005)	Recent Trend Data (Year of Data)	Summary
			presence may be affecting detectability. Management challenges in this hunting district include access and development (MFWP 2005, pp. 242-243). Cover has not been identified as an issue.
390	65 bulls	347 bulls (2014)	Above objective. Management challenges in the hunting district include access, noxious weeds, and a preponderance of private land (MFWP 2005, p 255).
391	40 bulls	188 bulls (2014)	Basically meets objectives. Management challenges in the hunting district include access, noxious weeds, and a preponderance of private land (MFWP 2005, p 255). Cover has not been identified as an issue.
392	10 bulls/100 cows or 7 percent bulls/total elk observed	10 bulls/100 cows (2011)	Meets objective. Management challenges identified for this hunting district include access and noxious weeds (MFWP 2005, p. 249).
446	67 bulls	250 bulls (2014)	Above objective. Management challenges for this hunting district are due to a preponderance of private land (MFWP 2005, pp. 299-300).
455	At least 60 percent harvest of brow-tined bulls	41 percent (2013)	Below objective; not enough bulls harvested relative to total harvest. Management challenges are focused on the numbers of wintering elk being below objectives due to heavy snowpack, heavy hunting pressure, and/or heavy harvest (MFWP 2005, pp. 321-322). Cover has not been identified as an issue.

There are 13 hunting districts that overlap with the Helena National Forest to the extent that management activities on the Forest could influence elk. There are a few other hunting districts that spill onto the Forest the extent of which is so minor as to render Forest management activities inconsequential. Seven of the hunting districts are at or above population objectives. One hunting district does not have objectives per se (hunting district 280); for the remaining hunting districts below objectives, cover has not been identified as a management challenge. This is not to suggest that the removal of hiding cover would not impact elk security but rather elk security has not been identified as a limiting factor in these hunting districts. As such, the amendment for Stonewall Vegetation project and those amendments described in the *Cumulative Effects* section should not compromise the ability of Montana Fish, Wildlife and Parks to realize population objectives or the Helena National Forest to provide big game security while providing for an extended hunting season.

Several Forestwide standards remain in place that would provide protection for elk habitat in the project area (Table 18). There are also Management Area specific standards that provide additional wildlife considerations. Of the six management areas that occur in the project area (M-1, T-1, T-2, T-3, T-4, W-1) three contain standards applicable to wildlife that would continue to be met under the Decision. These are also described in Table 18.

Table 18: Forestwide and Management Area specific standards relevant to elk

Forest Plan Reference	Standard
Forestwide p. II/18	Elk calving grounds and nursery areas will be closed to motorized vehicles during peak use by elk. Calving is usually in late May through mid-June and nursery areas are used in late June through July.
Forestwide p. II/18	All winter range areas will be closed to vehicles between December 1 and May 15. Exceptions (i.e., access through the winter range to facilitate land management or public use activities on other lands) may be granted.
Forestwide p. II/19	Montana Cooperative Elk-Logging Study Recommendations, in appendix C, will be followed during timber sale and road construction projects.
Appendix C, Recommendations from the Final Report of the Montana Cooperative Elk-Logging Study, 1970-1985 for Coordinating Elk and Timber Management (applicable sections), pp. C/1-11	Logging activity will be confined to a single drainage at a time with all work completed in the shortest time frame possible. Prior to logging, the project wildlife biologist will work with the pre-sale forester to compartmentalize drainages in order to meet this mitigation measure. Logging operations will be prohibited during the first two weeks of the general rifle season in order to maintain big game habitat capability and hunting opportunity. All temporary roads will be closed to the public. Recreational use of firearms will be prohibited for anyone working within an area closed to the general public. Slash clean-up inside clear-cuts will be reduced below 1.5 feet. Openings would be limited to 100 acres in size so as to provide efficient foraging areas for elk and deer with hiding and screening cover available in the surrounding forest.
T-2, p. III/35	Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, may be used to maintain and/or enhance the quality of big game winter habitat.
T-2, p. III/35	Schedule sale activities outside winter periods (December 1 to May 15).
T-2, p. III/35	No more than 25 percent of the timber-perimeter around natural or artificial parks should be non-thermal cover at one time.
T-3, p. III/39	Maintain thermal cover adjacent to forage areas. Appendix C provides guidance for thermal cover.
W-1, p. III/50	Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, will be used to maintain and/or enhance the quality of big game and nongame habitat.
W-1, p. III/50	Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent cover, where available, on identified winter range.

Lastly, the wildlife specialist report includes an analysis of elk security areas based on Hillis et al. (1991) as refined for local conditions. The report concludes that elk security would not be altered from the current condition post-implementation. Habitat Effectiveness, as described by Lyon (1979) and Christensen et al. (1993) would not be altered from the current condition post-implementation.

Appendix D: Treatments in the Decision by Unit.

Table 19: Detailed Treatment and Prescription Table by Unit.

Group	Unit	Logging System	Treatment Type	Prescription	Acres
1	6	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	14
1	7	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	17
1	8	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	62
1	23	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	29
1	24	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	5
1	28	Tractor	Intermediate Harvest	Improvement Cut, Under-burn	22
1	44	Skyline	Intermediate Harvest	Improvement Cut, Under-burn	67
1	45	Tractor	Intermediate Harvest	Improvement Cut, Under-burn	19
2	3	Mechanical	Intermediate Harvest	Pre-commercial Thin, Piling, Burn Piles	37
2	14	Hand	Intermediate Harvest	Pre-commercial Thin, Hand-piling, Burn Piles	11
2	16	Hand	Intermediate Harvest	Pre-commercial Thin, Hand-piling, Burn Piles	3
2	18	Mechanical	Intermediate Harvest	Pre-commercial Thin, Piling, Burn Piles	21
2	21	Mechanical	Intermediate Harvest	Pre-commercial Thin, Piling, Burn Piles	6
2	48	Mechanical	Intermediate Harvest	Pre-commercial Thin, Under-burn	141
2	49	Mechanical	Intermediate Harvest	Pre-commercial Thin, Under-burn	49
2	50	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	49
2	59	Mechanical	Intermediate Harvest	Pre-commercial Thin, No Burn	16
2	60	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	25
2	62	Mechanical	Intermediate Harvest	Pre-commercial Thin, No Burn	37
2	63	Mechanical	Intermediate Harvest	Pre-commercial Thin, No Burn	17
2	66	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	26
2	67	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	20
2	68	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	15
2	69	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	31
2	70	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	39
2	71	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	40
2	72	Mechanical	Intermediate Harvest	Pre-commercial Thin, No Burn	73
2	73	Hand	Intermediate Harvest	Pre-commercial Thin, No Burn	33
3	1a	Tractor	Regeneration Harvest	Shelterwood (Group) with Reserves, Site Prep Burn	83

Group	Unit	Logging System	Treatment Type	Prescription	Acres
3	9	Tractor	Regeneration Harvest	Seed-tree with Reserves, Slashing, Hand-piling, Burn Piles	18
3	12b	Tractor	Regeneration Harvest	Shelterwood (Group) with Reserves, Jackpot Burn	21
3	13b	Tractor	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	21
3	20	Tractor	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	32
3	22	Skyline	Regeneration Harvest	Shelterwood with Reserves, Site Prep Burn	30
3	25	Skyline	Regeneration Harvest	Seed-tree with Reserves, Broadcast Burn	29
3	34	Skyline	Regeneration Harvest	Shelterwood (Group) with Reserves, Jackpot Burn	12
3	39	Skyline	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	42
3	40	Tractor	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	11
3	42	Tractor	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	65
3	43	Tractor	Regeneration Harvest	Seed-tree with Reserves, Jackpot Burn	93
3	53	Skyline	Regeneration Harvest	Shelterwood (Group) with Reserves, Jackpot Burn	17
4	10	Tractor	Regeneration Harvest	Clearcut with Reserves, Jackpot Burn	18
4	17b	Tractor	Regeneration Harvest	Clearcut with Reserves, Jackpot Burn	24
4	19	Tractor	Regeneration Harvest	Clearcut with Reserves, Jackpot Burn	15
4	27	Skyline	Regeneration Harvest	Clearcut with Reserves, Site Prep Burn	31
4	35	Skyline	Regeneration Harvest	Clearcut with Reserves, Broadcast Burn	24
4	36	Skyline	Regeneration Harvest	Clearcut with Reserves, Broadcast Burn	20
4	38	Tractor	Regeneration Harvest	Clearcut with Reserves, Broadcast Burn	7
4	52	Skyline	Regeneration Harvest	Clearcut with Reserves, Broadcast Burn	22
4	74	Skyline	Regeneration Harvest	Clearcut with Reserves, Site Prep Burn	23
5	4	Tractor	Intermediate Harvest	Sanitation, Slashing, Hand-piling, Burn Piles	7
5	5	Tractor	Intermediate Harvest	Sanitation, Slashing, Hand-piling, Burn Piles	18
6	2	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	146

Group	Unit	Logging System	Treatment Type	Prescription	Acres
6	11	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	23
6	12a	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	59
6	13a	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	20
6	17a	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	14
6	57	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	93
6	58	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 Acres	15
6	78	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 acres	38
6	85	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 acres	143
7	80a	Hand	Prescribed Fire	Jackpot Burn	326
7	87	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 5 acres	36
8	79	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	136
8	84	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	669
8	88	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	483
10	46	Tractor	Intermediate Harvest	Improvement Cut, Under-burn	202
10	47	Tractor	Intermediate Harvest	Improvement Cut, Under-burn	155
10	51a	Mechanical	Intermediate Harvest	Improvement Cut, Prune, Pile and Burn	47
10	75	Tractor	Intermediate Harvest	Pre-commercial Thin, Under-burn	99
11	79a	Hand	Intermediate Harvest	Improvement Cut, Hand-piling, Burn Piles, Jackpot Burn	75
11	82	Hand	Intermediate Harvest	Improvement Cut, Hand-piling, Burn Piles, Jackpot Burn	372
11	83	Hand	Intermediate Harvest	Improvement Cut, Hand-piling, Burn Piles, Jackpot Burn	108

Appendix E: Supporting Documentation for the Stonewall Decision

The Stonewall Vegetation project decision is a blending of treatment units from both alternatives 2 and 3 in the final environmental impact statement. The following resource documentation demonstrates that the decision is supported in the final environmental impact statement analysis and when deemed necessary resource specialists have provided clarifying analysis for decision.

Since the publishing of the final environmental impact statement and draft record of decision, two wildfires burned in and adjacent to the project area. The Sucker Creek Fire burned 110 acres in the project perimeter and 29 acres within treatment units. The Klondike Fire burned 550 acres in the project perimeter and 350 acres in treatment units. As a result of these wildfires, 1,027 acres of treatment were removed from the decision. All of the acres removed from the decision were from units considered for prescribed fire. Lastly, since the FEIS and draft ROD were published, the Forest Service was notified of an additional 1,375 acres of harvest on Department of Natural Resources lands between 2010 and 2016. The documentation in this Appendix is a compilation of all project resource specialists reviewing the documentation in the FEIS while considering the wildfire and Department of Natural Resources harvest information, and providing any needed documentation or explanation to support the blended alternative in the decision

Table 20: Summary of Decision Treatments

Group	Decision Treatment Summary	Decision Acres
1	Intermediate Harvest to Promote Mature Open Forests	235
2	Intermediate Harvest to Thin Young Forests	690
3	Regeneration Harvest in Areas of High Mortality Retaining Seed and Shelter Trees	476
4	Regeneration Harvest in Areas of High Mortality Retaining Rare Live Trees	184
5	Intermediate Harvest to Remove Minor Amounts of Dead/Dying Trees	25
6	Low Severity Prescribed Fire to Create Mortality Patches less than 5 acres	549
7	Mixed Severity Fire to create mortality patches less than 5 acres and Jackpot Burning	363
8	Mixed severity fire to create mortality patches less than 30 acres	1,288
10	Intermediate Harvest to Promote Mature Open Forests	503
11	Whitebark Pine Restoration	555

Fire/Fuels and Air Quality

Direct and Indirect Effects

The direct and indirect effects of the Stonewall decision are within the effects already analyzed for fire/fuels and air quality. The acres being treated within the decision is between the acreages analyzed in alternatives 2 and 3. These effects are described in the fuels and air quality specialist reports.

Irreversible/Irretrievable Commitments

The irreversible and irretrievable commitments of this decision are similar for fire/fuels and air quality than those analyzed under alternatives 2 and 3 of the final environmental impact statement. Treatment acres and scale for the Stonewall decision falls between alternatives 2 and 3.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed under alternatives 2 and 3 of the final environmental impact statement. No change.

Conclusions

The Stonewall decision would be consistent with the objectives of the Helena National Forest Land and Resource Management Plan by:

Mechanical treatments will reduce fuel loading and potential fire behavior within the wildland urban interface.

Prescribed burn treatments will reduce surface fuels, reduce stand density and break up contiguous vegetation to create a heterogeneous fuel-scape so that areas with high fire behavior potential are interspersed with areas of mixed and low fire behavior potential. Smoke management will comply with federal and state standards and will protect air quality.

The Helena National Forest Land Resource Management Plan goals for fire and fuels management are still valid. Actions are needed to effectively treat vegetation in key areas to reduce the potential threat of future high intensity wildfire moving from National Forest onto private land. By implementing all design criteria and mitigation measures listed in appendix B, this decision will have similar effects on fire/fuels to those described in alternatives 2 and 3 of the Fire/Fuels Specialist Report. The Decision is within the range of effects for air quality as documented in the Air Quality Specialist Report for alternatives 2 and 3. This decision of vegetation management treats enough area to reduce the risk of high intensity, stand replacing wildfires and modifies fire behavior over the broader landscape.

Forested Vegetation

Old Growth

No old growth stands were burned in either the Sucker Creek or Klondike Fires within the Stonewall project area, or within 3rd order drainages 203 or 204a. As outlined in the Old Growth and Snag Analysis in the project file, Forest Plan standards for old growth are met for 3rd order drainages 203 and 204a. No old growth is included in any treatment units in either of these drainages. An estimated 55 acres of old growth in Unit 2, outside of 3rd order drainages, will be burned under moist conditions to minimize mortality to larger trees (greater than 17-inches diameter-at-breast-height) and consumption of large woody debris (Design Feature WL-30). Portions of Unit 46 identified as old growth will be excluded from the unit, and will not be treated.

Snags

Table 21 below compares acres treated in each 3rd order drainage, and project-wide for each of the final environmental impact statement alternatives and for the selected alternative. In addition 520 acres will be excluded from treatment units to meet INFISH riparian management objectives (Design Features S/WS/F -16 and 17), maintaining current snag densities.

Table 21: Alternative treatment acres by drainage.

Treatment	Drainage/ Project Area	Alt 2 (Acres/ percent of Area)		Alt 3 (Acres/ percent of Area)		Decision (Acres/ percent of Area)	
Intermediate/ Regeneration	203	1,210	25 percent	716	15 percent	865	18 percent
	204a	218	3 percent	218	3 percent	218	3 percent
	Project Area	3,100	14 percent	2,118	9 percent	2,038	8 percent
Prescribed Burning	203	859	18 percent	244	5 percent	154	3 percent
	204a	1,050	15 percent	1,046	15 percent	1,080	16 percent
	Project Area	5,463	24 percent	4,445	19 percent	1,324	6 percent

The analysis in the Stonewall Silvicultural Report estimated snag numbers greater than or equal to seven inches to be: 45 snags per acre for drainage 0203, 41 snags per acre for drainage 0204a, and 43 snags per acre for the entire project area. This analysis assumed that snags will be reduced to 2 per acre in harvest units, and increase by 74 to 76 snags per acre in mixed severity burns as modeled using Forest Vegetation Simulator. In addition, a total of 345 acres was estimated to have severely burned within the project area between the Sucker Creek and Klondike Fires, based on Burned Area Reflectance Classification mapping.

These severely burned areas are assumed to have sustained complete mortality of live trees, so the number of trees per acre 7-inches diameter-at-breast-height and greater in each of the stands within these burned areas was obtained using VMap, and weighted by the proportion of the total burned area to estimate the number of snags per acre resulting from each of the fires. Within the project area, the 110 acres burned in the Sucker Creek Fire is estimated to have 125 snags per acre, and 550 acres burned in the Klondike Fire (all within drainage 204a) is estimated to have 98 snags per acre. No fire occurred within drainage 203.

Proportioning snags per acre for each of the conditions by acreage, total snags per acre are estimated:

Drainage 203:

(harvest areas = .18 x 2 snags per acre) + (mixed severity burn = .03 x 75 snags per acre) + (untreated = .79 x 45 snags per acre) = 38 snags/acre

Drainage 204a:

(harvest acres = .03 x 2 snags per acre) + (mixed severity burn = .16 x 75 snags per acre) + Klondike Fire = .04 x 98 snags per acre) + (untreated = .77 x 41 snags per acre) = 48 snags/acre

Project Area:

(harvest acres = .08 x 2 snags per acre) + (mixed severity burn = .06 x 75 snags per acre) + Klondike and Sucker Creek Fires = .01 x 105 snags per acre) + (untreated = .85 x 43) = 42 snags/acre

Based on these methods, under the selected alternative, snag densities would decrease to 38 per acre in 3rd order drainage 203, increase to 48 per acre in 3rd order drainage 204A, and decrease slightly to 42 per acre over the entire project area. Riparian buffers will result in a slight increase in projected snag densities in intermediate and regeneration harvest units, and a slight decrease due to excluded portions of burned units, since no trees would be killed in these areas. Thus, snag densities would remain in the order of 20 times those required by Forest Plan standards.

No ponderosa pine stands were burned by wildfire in 2015 in this analysis area. Two stands classified as whitebark pine, totaling 13 acres, were burned. These will be monitored for potential replanting with rust-resistant whitebark pine seedlings.

Cumulative effects for the decision are similar to those for alternatives 2 and 3 and within the range of effects found in the final environmental impact statement.

Wildlife

Introduction

The Decision for the Stonewall Vegetation Project incorporates components of alternatives 2 and 3. Overall, the effects analyses and conclusions described in the final environmental impact statement including the biological evaluation are still applicable although there is a change in the magnitude of acres affected. Since the publishing of the final environmental impact statement and draft record of decision, two wildfires (Sucker Creek and Klondike Fires) have burned in and adjacent to the project area. The Sucker Creek Fire (approximately 3,060 acres of which 2,435 burned) burned primarily outside of the project boundary; the Klondike Fire (approximately 550 acres of which 253 acres burned) burned entirely within the project boundary. In addition, approximately 1,375 acres of state lands within the combined boundary were harvested from 2010 to 2016 in 11 sale areas in addition to the Liverstone Park project previously considered.

Described here are the overall effects of the Stonewall decision to the wildlife habitats and species described in the final environmental impact statement with updated acre calculations, where applicable. The Canada lynx, grizzly, fisher, flammulated owl, goshawk, pileated woodpecker, and marten analyses also include updated acres calculations that reflect the effects of the Sucker Creek and Klondike Fires and the state lands harvest. Other species are described qualitatively with reference to the final environmental impact statement or are assumed to be analyzed with another species for which quantitative information is provided (i.e. hairy woodpecker is assumed to be covered by the pileated woodpecker discussion). All mitigation measures and design elements for this decision are found in appendix B.

Wildlife Habitats of Special Concern

Dry Forest Habitat, Cool-moist Forest Habitat, Upper Sub-Alpine Fir (Whitebark Pine), Riparian Habitat, Mountain Meadow and Shrub, Aspen, and Deadwood

Direct and Indirect Effects

The changes made for the Decision result little to no change on the effects to special habitats already disclosed in the action alternatives. Acres of dry forested habitat treated will decline slightly in the Decision compared with alternatives 2 and 3 which in turn will result in fewer acres of ponderosa pine treatments (Table 22). While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. However, the effects and conclusions in the final environmental impact statement remain relevant. Implementation of the Decision will result in the enhancement of dry forests, including ponderosa pine, which will provide habitat in the long term for species like pileated woodpeckers, flammulated owls, and Cassin's finches. In the short term, hiding cover and shrub richness and abundance in the understory will decrease. The decision will create a more heterogeneous landscape that more closely represents reference conditions and the associated wildlife species.

Table 22: Alternative treatment acres by biophysical setting

Habitat	Area Treated					
	Alternative 2		Alternative 3		Decision	
	Acres	Percent[1]	Acres	Percent[1]	Acres	Percent[1]
Barren 68 acres - (less than 1 percent)						
Prescribed Fire	7	10	5	7	4	6
Douglas Fir Dry – 5,579 acres (23 percent)	1,798	32	1,140	20	835	15
Intermediate Harvest	187	3	66	1	80	1
Prescribed Fire	1,511	27	975	17	657	12
Regeneration Harvest	100	2	99	2	96	2
Douglas Fir Moist – 5,862 acres (24 percent)	1,783	30	1,192	20	737	13
Intermediate Harvest	50	1	22	less than 1	248	4
Prescribed Fire	1,702	29	1,156	20	482	8
Regeneration Harvest	31	less than 1	14	less than 1	6	less than 1
Mtn. Meadow with Shrub - 678 acres						
Prescribed Fire	75	11	75	11	6	less than 1
Mtn. Shrubland - 138 acres						
Prescribed Fire	18	13	18	13	1	less than 1
Ponderosa Pine/Douglas-fir – 7,742 acres	3,821	49	3,077	39	2,845	36
Intermediate Harvest	1,849	23	1,350	17	1,320	17
Prescribed Fire	1,134	15	1,023	13	967	12
Regeneration Harvest	838	11	704	9	558	7
Lower Subalpine Forest – 3,331 acres						
Prescribed Fire	890	27	887	27	83	3
Upper Subalpine Forest - 580 acres						
Prescribed Fire	125	21	125	21	0	0

[1]Percent of the biophysical setting within the project area

Treatments in cool, moist forested habitats in the Decision are in between alternatives 2 and 3. The Decision will result in the treatment of 737 acres of cool, moist forest while alternative 2 would treat 1,783 acres and alternative 3 would treat 1,192 acres. The majority of treatment will be prescribed fire. Thus, the effects will be similar to those described for alternative 3 for cool, moist forested habitat.

Treatments in whitebark pine (see ‘Lower Subalpine Forest’ and ‘Upper Subalpine Forest’), mountain meadows, and shrublands in the Decision are slightly less than both action alternatives. Therefore, the

effects analysis and conclusions are the same as those described for those alternatives in the final environmental impact statement.

There are no changes in effects to riparian habitats in the Decision from those disclosed in alternatives 2 and 3. The Decision will result in removal of some mature trees, as well as smaller diameter down woody debris. However, with implementation of project design features and streamside management zones, very limited harvest will occur. Any burning within riparian areas will be low intensity, and much of the riparian habitat will be unburned or lightly burned.

Aspen treatments in the Decision are similar to alternatives 2 and 3. Therefore, the effects analysis and conclusions are the same as those described for in the final environmental impact statement. The aspen treatments should result, ultimately, in maintaining or improving the aspen component in the project area.

Effects to snags vary in the Decision depending on the treatment type (Table 23). The effects analysis and conclusions in the final environmental impact statement are applicable to the Decision. Snags and down woody debris will continue to be abundant and well-distributed in the project area post-treatment.

Table 23: Snag and Downed Woody Debris effect and treatment summary

Treatment	Effects	Alternative 2		Alternative 3		Decision	
		Acres	%	Acres	%	Acres	%
Regeneration Harvest	Long-term reduction in snags and down woody debris. Retention of large diameter snags greater than 20 inches, as well as a component of small diameter snags and snag recruitment trees. Some down woody debris including component of large diameter logs retained.	968	4	816	3	660	3
Intermediate Treatments	Reduction in snags and down woody debris. Retention of large diameter snags greater than 20 inches, as well as a component of small diameter snags and snag recruitment trees. Some down woody debris including component of large diameter logs retained.	2,131	9	1,482	6	2,009	8
Low Severity Fire	Large and medium diameter snags retained and an increasing number of small diameter snags available. Reduction in small diameter down woody debris across the area treated, although some down woody debris including large diameter logs would be retained. Distribution would be patchy or clustered. Twenty percent of the site would be unaffected.	449	2	964	4	875	4

Treatment	Effects	Alternative 2		Alternative 3		Decision	
		Acres	%	Acres	%	Acres	%
Mixed Severity Fire	Increase in small and large diameter snags. Some down woody debris including large diameter logs retained. down woody debris patchy in areas with low severity fire, whereas more intense burning would have decreased down woody debris and increased snags in all size classes. Net increase or pulse of down woody debris likely. Twenty percent of the site would be unaffected.	5,014	21	3,301	14	1,325	6
Unaffected Habitat	Standing and down wood available in the short and long-term, although possible long-term reduction in large diameter snags on sites containing ponderosa pine.	15,106	64	17,106	72	19,137	80

Cumulative Effects and Forest Plan Consistency

Biophysical setting data was used to determine acres of wildlife habitats of concern within the Stonewall Project boundary. Biophysical setting data is unavailable for all the acres within the cumulative effects boundary, however a more generalized vegetation dominance can be determined using VMap data. The eleven projects on states lands included approximately 13 acres of meadow, seven acres of shrub, 317 acres of ponderosa pine, 885 acres of Douglas-fir, 71 acres of lodgepole pine, and 15 acres of Engelmann spruce. These treatments results in the same cumulative effects as described in the final environmental impact statement; treatment of ponderosa pine and dry type Douglas-fir will improve dry forest habitats while treatment of moist Douglas-fir will improve cool, moist forested habitat. Other effects and Forest Plan Consistency are as described in the final environmental impact statement.

Landscape Diversity, Connectivity and Fragmentation

The effects described in the final environmental impact statement are applicable for the Decision with regards to landscape diversity, connectivity and fragmentation. The changes in treatment acres in the Decision are described here.

Direct and Indirect Effects

The effects to landscape diversity, connectivity and fragmentation associated with the Decision are similar to those described for the other action alternatives in the final environmental impact statement except that the amount of acres treated are less. The amount of acres treated overall (4,868) is less than those proposed in alternative 3 (6,564) and alternative 2 (8,564). While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. However, the effects as described in the *Specialist Report* remain applicable.

Landscape diversity will change similar to alternatives 2 and 3, with an increase in early seral habitat and corresponding slight decrease in mature forest habitat.

Connectivity effects under the Decision are similar to alternative 3, with approximately 18 percent less regeneration harvest, sixty percent less mixed severity fire resulting in openings, and forty-five percent

more open canopy habitat due to partial harvest. As a result, effects to closed-canopy forest and changes to wildlife movement are similar to those described for alternative 2.

Approximately 80 percent of the project area will be unaffected by treatment in the Decision, similar to alternative 3. Effects on fragmentation under the decision are slightly less than that described for alternative 3 on the 20 percent of the project area treated. In the short term, wildlife species may have to adjust their movement patterns to take advantage of untreated areas; however, treatments are designed to mimic natural patterns and therefore impacts to movement should be minimal. Approximately 0.9 miles of temporary road construction would occur as part of the Decision which is less than that proposed in alternative 2 (2.6 miles) and slightly more than alternative 3 (0.4 miles). Fragmentation associated with road construction will not be as pronounced as in alternative 2 because fewer temporary roads will be constructed. Road decommissioning in the long term will serve to consolidate patches of habitat that are currently segmented by road beds.

Cumulative Effects

The cumulative effects and Forest Plan Consistency described in the final environmental impact statement remain the same for diversity, connectivity, and fragmentation.

Canada Lynx

Effects to Canada lynx are described in terms of effects to critical habitat, Canada lynx, and its habitat. The analysis completed in the final environmental impact statement remains applicable for the Decision. Decision specific analysis for lynx and lynx critical habitat are documented in the terrestrial biological assessment for the Stonewall Vegetation decision. The terrestrial biological assessment is found in the Stonewall project record. The biological opinion from U.S. Fish and Wildlife Service in response to the biological assessment is also in the project record, while the incidental take statement and terms and conditions submitted to the Forest Service from U.S. Fish and Wildlife Service for the Stonewall project are identified in appendix G of this Record of Decision.

Forest Plan Consistency

The Forest Plan was amended in 2007 to include the Northern Rockies Lynx Management Direction. Forest Plan standards for lynx are documented in appendix F of this Record of Decision.

Cumulative Effects

The cumulative effects described in the final environmental impact statement remain the same for Canada lynx. The terrestrial biological assessment for the Stonewall Vegetation decision documents the cumulative effects for the selected actions. They are within the range of effects documented in the Stonewall final environmental impact statement.

Effects Determination for the Decision

The determination for implementation of the proposed Federal Action is "**may affect — likely to adversely affect"** for Canada lynx. The determination is based on the following rationale:

- The Canada lynx and its habitat occur in the project area.
- Snowshoe hares appear to be abundant on the Lincoln Ranger District and potential foraging habitat for lynx appears to be plentiful at that scale.
- BL-08 currently exceeds Veg S1 with greater than 30 percent of the lynx analysis unit in early stand initiation.

- Approximately 841 acres of lynx feeding habitat would be affected by the project. All of this is within the wildland-urban interface. The 841 acres are about 6 percent of the 13,121 acres of lynx feeding habitat that currently exist in the two project lynx analysis units.
- Vegetation management and temporary road construction will cause a short-term reduction in cover habitat and a reduction in availability of coarse woody debris for future denning habitat.
- Landscape-level travel connections will be maintained.
- About 0.9 miles of temporary road will be built, mostly through "other" (non-feeding) habitat.
- Human activities during proposed vegetation management, road construction, and other efforts could potentially displace Canada lynx (Interagency Lynx Biology Team 2013).
- If active lynx denning is discovered, operations within that unit or on that road will cease until the wildlife biologist is notified, and activities are modified if necessary to maintain reproductive efforts.
- Cumulatively, far less than the Helena National Forest's 26,400 acre (6 percent) allowance for fuel treatment projects within the wildland-urban interface would be used.
- New science relevant for conservation of Canada lynx in northwest Montana is consistent with conservation measures in the LCAS (Interagency Lynx Biology Team 2013) and management direction in the Northern Rockies Lynx Management Direction (USDA FS 2007a). This includes Ausband and Baty 2005, Berg et al. 2012, Bull et al. 2005, Bunnell et al. 2006, Ellsworth 2009, Gilbert and Pierce 2005, Griffin 2004, Griffin and Mills 2004, Griffin and Mills 2007, Kolbe et al. 2007, Lewis et al 2011, Maletzke et al. 2008, Mills et al. 2005, Olson et al. 2011, Squires 2009, Squires et al. 2008, Squires et al. 2010, Squires et al. 2013, and Squires and Ruggiero 2007. The U.S. Fish and Wildlife Service determined (USDI FWS 2013a) that new information made available since 2007 (USDA FS 2013), is consistent with information considered for the Northern Rockies Lynx Management Direction's 2007 Biological Opinion and thus re-initiation of consultation on the Northern Rockies Lynx Management Direction is not required for Canada lynx.

For Canada lynx critical habitat, the determination for implementation of the proposed Federal Action is "**may affect — likely to adversely affect**" for the following reasons:

- The Stonewall Project will not result in destruction of critical lynx habitat.
- All Primary Constituent Elements (PCE) will remain abundant and well distributed across the project lynx analysis units before, during, and after implementation.
- The 438 acres providing for Primary Constituent Elements 1a (presence of snowshoe hares and their habitats) that will be affected is 1.1 percent of lynx critical habitat across the two project lynx analysis units and less than 0.01 percent of Critical Habitat Unit 3.
- Other than some anticipated cross-country snowmobile travel within some harvest units, Primary Constituent Element 1b (deep fluffy snows) will not be affected by this proposal.
- The 493 acres providing for Primary Constituent Element 1c (denning habitat) that will be affected is 1.3 percent of lynx critical habitat across the Stonewall Project lynx analysis units and less than 0.01 percent of Critical Habitat Unit 3.
- Primary Constituent Element 1d (matrix habitat) will still support the ability of lynx to travel within their home range.

Grizzly Bear

Effects to grizzly bear are described in terms of effects to denning habitat. The analysis completed in the final environmental impact statement remains applicable for the Decision, although some small changes are reported here.

Direct and Indirect Effects

Resident and/or transient bears could occur throughout the entire project area and be exposed to human activities associated with winter recreational use. Two primary concerns with winter recreation with respect to grizzlies are the potential effects associated with denning and spring emergence. Winter recreational activities would primarily occur during the winter denning period although under the proposed action use would extend beyond the April 1st spring emergence period. Under the existing condition there is no season ending date.

Forest Plan Consistency

There are two specific *Forest Plan* standards applicable to management of grizzly bear habitat. Appendix F page 153, for documentation of compliance with both of these standards. Additional documentation of compliance with these standards is found in the terrestrial biological assessment on pages 37 to 38.

Cumulative Effects

The cumulative effects described in the final environmental impact statement remain the same for grizzly bears.

Effects Determination for the Decision

The decision will improve landscape level foraging habitat for grizzly bears over time. Whitebark pine and aspen habitats will be maintained or enhanced and harvest and burning activities will increase forage production in forest understories. However, in the short term there will be a reduction in cover and forage, increased potential for displacement of bears and an increased risk of bear/human conflicts. The determination of the analysis is that implementation of the Stonewall Vegetation Management Project **May Affect, Likely to Adversely Affect** grizzly bear. This determination is due to the current degraded baseline of the Red Mountain subunit for access management. Project activities will neither degrade nor improve the baseline during or after implementation, therefore, the subunit will continue to have a degraded baseline adversely affecting grizzly bears. Other project activities are not expected to appreciably contribute to adverse effects upon grizzly bears. The rationale for the determination is based upon the following:

- Activities associated with the proposed project will result in short-term displacement during project activities.
- Project activities will result in short and long term reductions in cover as well as short and long term increases in forage availability.
- Within the Arrastra Mountain sub-unit, all 19/19/68 access management objectives will be met during and post implementation even though open motorized route density will increase by 2 percent during implementation. Although not substantive enough to change the numeric value for total motorized route density there will be a slight increase in total motorized route density during implementation due to the construction of 0.9 miles of temp road. There will be no change to CORE during or after project implementation.
- There will be no change in open motorized route, total motorized route density, or CORE in the Red Mountain subunit during or after project implementation. The Red mountain subunit currently has a degraded baseline however, which will not improve during or after implementation, therefore the subunit will continue to adversely impact bears.
- While 0.9 miles of temporary roads will be constructed within the Arrastra Subunit, all roads will be closed to public access during implementation and obliterated immediately following use. There will be no change in public motorized access during or post implementation.
- Over 94 percent of modeled den habitat will be maintained. Due to the seasonal operating restrictions from 12/1-5/31 there are no anticipated effects to grizzly bear denning activity.

- Greater than 80 percent of all timber harvest occurs in close proximity to open roads and concentrated human activity, reducing the potential for bears to be to present and negatively affected by project activities. Only short-term disturbance is anticipated during implementation and there are no long-term adverse direct effects to bears anticipated.
- Existing forested cover will be maintained on 96 and 99 percent of the Arrastra and Red Mountain sub-units respectively.
- Proposed treatments would promote the long-term sustainability of whitebark pine, increase stand and landscape level forage, and restore fire to the landscape while reducing the risk of stand replacing wildfire and a further reduction in grizzly bear habitat.
- All treatments are consistent with Forest Plan goals, objectives and standards and comply with Interagency Grizzly Bear Committee guidelines.

Wolverine

Effects to wolverine are described in terms of effects to natal denning habitat and habitat connectivity. The analysis completed in the final environmental impact statement remains applicable for the Decision, although some small changes are reported here. In addition, the status of wolverine has changed. The District Court of Montana has vacated the August 2014 Withdrawal of the Proposed Rule to list the wolverine as a threatened species by the United States Fish and Wildlife Service. As such, wolverine is once again a proposed species (see Helena National Forest List of Threatened, Endangered and Candidate Species dated May 24, 2016). The Programmatic Biological Assessment for North American Wolverine (May 19, 2014) analyzes the proposed activities of the Stonewall Vegetation Project.

Direct and Indirect Effects

The Decision does not propose commercial timber harvest in primary wolverine habitat. The amount of mixed severity burning in wolverine habitat in the Decision is far less than in alternatives 2 and 3. Approximately 146 acres of maternal habitat is within mixed severity prescribed fire, a reduction from the 1,010 acres under alternatives 2 and 3. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. The Decision includes intermediate harvest on 158 acres of maternal wolverine habitat. This is whitebark pine improvement treatment that replaces the mixed severity fire in some areas. Although the method of treatment changed in the decision, the effects to wolverine habitat are the same as the effects from mixed severity fire analyzed under alternatives 2 and 3. Habitat changes, including canopy loss, reduced understory structure and a reduction in downed woody debris, are as described in the final environmental impact statement.

The Decision does not include changes in road management or public access. New roads to be obliterated immediately following harvest are proposed on 0.9 miles and effects are as described in the final environmental impact statement. Per the conclusions identified in the final environmental impact statement the Decision should have little to no impact on wolverine natal denning habitat or connectivity.

Based on the analysis in the Programmatic Biological Assessment for the North American Wolverine (May 19, 2014), the Summary Sheet for Wolverine Programmatic Assessment completed for this project (June 1, 2014), and the concurrence letter received from the USFWS dated May 23, 2014, the project wildlife biologist has determined that the Stonewall Vegetation Project will not likely jeopardize the continued existence of the North American wolverine.

Forest Plan Consistency

There are no specific *Forest Plan* standards applicable to management of wolverine habitat.

Cumulative Effects

The cumulative effects described in the final environmental impact statement remain the same for wolverine. There is no modeled wolverine denning or maternal habitat within the state land sales areas, and these areas lack persistent snow.

Gray Wolf

Effects to gray wolf are described based on potential for wolf/human interaction, effects on the wolf prey base, and impacts to the integrity of key wolf habitat (i.e., rendezvous and den sites). As there are no den or rendezvous sites affected by the project and no mortality is anticipated under the Decision, the direct, indirect and cumulative effects described in the final environmental impact statement are applicable to the Decision, as are the conclusions and Forest Plan consistency. Harvest on state lands increases the acres treated by wildfire, hazard tree removal, timber harvest and prescribed burning that may result in long term changes to wolf cover and forage conditions in the analysis area cumulatively; however, there will still be approximately 70 percent of the analysis area unaffected by treatment.

Fisher

Under the Decision, 1,412 acres of fisher habitat are within treatment units. This is slightly more acres (140) than alternative 3. Table 24 displays existing fisher, fisher habitat affected by treatment and post-treatment fisher habitat under the action alternatives. Acres existing habitat under the decision was altered to reflect the Sucker Creek and Klondike fires.

Table 24: Effects to fisher habitat

Habitat Conditions	Alternative 2			Alternative 3			Decision		
	Den	Foraging	Total	Den	Foraging	Total	Den	Foraging	Total
Acres Existing Habitat	3,042	1,369	4,411	3,042	1,369	4,411	3,016	1,368	4,384
Acres Habitat Reduced	994	287	1,281	470	135	605	572	97	669
Acres Post-Treatment Habitat (percent of existing habitat)	2,048 (67%)	1,082 (79%)	3,130 (71%)	2,571 (85%)	1,233 (90%)	3,805 (86%)	2,444 (81%)	1,271 (93%)	3,715 (85%)
Acres Structure Reduced[1]	543	331	874	433	233	666	242	39	281
Acres of Unaffected Habitat[2] (percent of existing habitat)	1,505 (49%)	751 (55%)	2,256 (51%)	2,138 (70%)	1,000 (73%)	3,139 (71%)	2,202 (73%)	1,232 (90%)	3 (78%)

1 – habitat affected by low severity burning and intermediate harvest that maintains 40 percent canopy closure
2 – includes INFISH buffer habitat

Direct and Indirect Effects

Under the Decision, approximately 2,202 acres of existing den/rest habitat (73 percent) and 1,232 acres of foraging habitat (90 percent) will be unaffected and effects will be similar to those described under alternative 3 in the final environmental impact statement. Similar to alternative 3, timber harvest and mixed-severity burning will be reduced. A total of 669 acres of suitable fisher habitat will be affected, including 572 acres of den/rest habitat and 97 acres of other foraging habitat. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Potential direct effects will be similar to those described under alternative 3, although because slightly more acres (572 acres in the decision compared to 470 acres in alternative 3) of den/rest habitat will be treated, the likelihood that a den will be affected is increased under the Decision. The likelihood of disturbance to non-denning individuals is also slightly increased. Temporary road construction within suitable fisher habitat will occur, and like alternative 2 and 3, there will be no changes in public access or trapping pressure.

Approximately 85 percent of the existing suitable habitat or approximately 3,715 acres will be retained, including 2,444 acres of existing den rest habitat (81 percent) and 1,271 acres of existing foraging habitat

(93 percent). The total acres where habitat quality will be reduced are slightly less than alternative 3. Under the Decision, habitat quality will be reduced on 39 acres of foraging and 242 acres of den rest habitat. Like alternatives 2 and 3, while treatment will reduce the availability of dead wood, with implementation of project design features all units will continue to provide between five and twenty tons per acre of downed wood and a component of large diameter logs. As a result and considering the large amount of standing and downed wood within all project area watersheds and retention of downed wood within riparian areas and on 20 percent of prescribed burn sites, downed wood will continue to be available at both the stand and landscape level.

Treatment changes under the Decision will retain larger blocks of closed canopy forest in both the Beaver Creek and Lincoln Gulch drainages. While project area use by fisher is considered low, habitat connectivity will be better maintained under the decision. There is no fisher habitat within the state land timber harvest areas. Cumulative effects of the Decision will be as described in the final environmental impact statement.

Determination and Conclusions

The Decision may impact individuals, but are not likely to cause a trend toward federal listing for fisher. The rationale is as described in the final environmental impact statement for alternative 3.

Townsend's Big Eared Bat

The project area does not provide suitable hibernacula or roost sites and only foraging bats will be affected. The effects to foraging habitat are the same as those described for alternative 3 in the final environmental impact statement. The Decision **may impact individuals, but are not likely to cause a trend toward federal listing** for Townsend's big-eared bat. The rationale is as described in the final environmental impact statement for alternative 3.

Bald Eagle

The effects to bald eagle from the Decision are as described in the final environmental impact statement for alternatives 2 and 3. The Decision **may impact individuals, but is not likely to result in a trend toward federal listing** for the bald eagle.

Black-backed Woodpecker

Direct and Indirect Effects

Direct and indirect effects to black-backed woodpecker under the Decision are as described for alternatives 2 and 3 in the final environmental impact statement. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. The Decision would reduce black-backed woodpecker habitat on 2,668 acres proposed for harvest. Areas proposed for low intensity under-burning would fall between those acres proposed under alternatives 2 and 3. Mixed severity under-burning would occur on notably fewer acres than alternatives 2 and 3, decreasing snags and potential high quality black-backed woodpecker foraging habitat on approximately 1,325 acres (compared to 3,689 and 1,976 acres in alternatives 2 and 3, respectively. Since the publishing of the final environmental impact statement and draft record of decision, two wildfires (Sucker Creek and Klondike Fires) have burned in and adjacent to the project area. The Sucker Creek Fire (approximately 3,060 acres of which 2,435 burned) burned primarily outside of the project boundary; the Klondike Fire (approximately 549 acres of which 253 acres burned) burned entirely within the project boundary. Habitat

created for black-backed woodpeckers by these fires will add to any beneficial habitat created by the prescribed burn units of the Stonewall Project. Any burned habitats created by these wildfires and the project would be available to the species for a range of three to eight years and would subsequently decline with the eventual reduction of wood boring insects.

Cumulative Effects and Forest Plan Consistency

The cumulative effects and Forest Plan Consistency described in the final environmental impact statement remain the same for the black-backed woodpecker. See that discussion and the *Snag* section above for details.

Flammulated Owl

Effects to flammulated owls are described in terms of acres of potential habitat treated, impacts to large snags, and acres of ponderosa enhanced. While the analysis completed in the final environmental impact statement remains applicable for the Decision, some of the calculations have changed and are reported here.

Direct and Indirect Effects

Table 25 displays treatments by action alternative and the Decision within existing flammulated owl habitat and dry forest. The general effects of treatment on flammulated owl habitat are as described in the final environmental impact statement. The differences in amount of habitat affected are described here.

The Decision measurably reduces the amount of regeneration harvest and mixed severity burning from that described from alternative 3. Similar to alternative 3, over ninety percent of the existing flammulated owl habitat would be maintained and low severity fire and intermediate harvest would improve approximately 12 percent of the existing habitat. Changes within dry forest habitat are slightly reduced (by 232 acres from Table 22) from alternative 3 and the discussion for alternative 3 in the final environmental impact statement applies to the Decision. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 25: Alternative Treatment of Flammulated Owl Habitat

Treatment	Alternative 2		Alternative 3		Decision	
	Acres	Percent	Acres	Percent[1]	Acres	Percent
Suitable Flammulated Owl Habitat (1,456 acres)						
Intermediate harvest	162	11[1]	13	1[1]	126	9[1]
Regeneration harvest/fire-created openings	126	9[1]	71	5[1]	8	Less than 1[1]
Low severity burning	282	20[1]	305	21[1]	42	3[1]
1-percent of suitable habitat						

Cumulative Effects and Forest Plan Consistency

An additional 65 acres of flammulated owl habitat would be removed due to harvest on state lands, bringing the total to 199 acres reduced. Over 87 percent of the existing flammulated owl habitat would be

maintained and nesting and foraging habitat will improved in the long term. Landscape conditions consistent with flammulated owl use would be maintained or improved.

Boreal Toad

Effects to boreal toad are evaluated in terms of effects to riparian areas in the project area.

Direct and Indirect Effects

There are no changes in effects to riparian habitats in the Decision; therefore there are no anticipated changes in effects to boreal toads. The Decision treats approximately the same number of acres by harvest and mixed severity burning as alternative 3, and effects are as described in the final environmental impact statement.

Cumulative Effects and Forest Plan Consistency

The cumulative effects and Forest Plan Consistency described in the final environmental impact statement remain the same for the boreal toad.

Goshawks

Effects to goshawks are based on impacts to nesting and foraging habitat as well as the post-fledging area (PFA). While the analysis completed in the final environmental impact statement remains applicable for the Decision, some of the calculations have changed and are reported here.

Direct and Indirect Effects

Changes in Habitat

Existing nesting and foraging habitat that would occur under the Decision are displayed in Table 26. Table 27 displays the goshawk habitat remaining after Decision implementation. Sites proposed for regeneration harvest treatment would no longer provide goshawk nesting and foraging habitat. Harvest and openings created by mixed-severity fire would reduce nest habitat by approximately 373 acres under the Decision, less than the 444 acres under alternative 2 and slightly more than the 324 under alternative 3. Much of this reduction would be in small scattered parcels of nest habitat and nest habitat in blocks greater than 40 acres would be reduced less than alternative 2 and comparable to alternative 3. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 26: Goshawk habitat proposed for treatment

Treatment	Alternative 2		Alternative 3		Decision	
	Acres	Percent	Acres	Percent	Acres	Percent
Nest Habitat						
Intermediate Harvest	910	14	331	5	615	10
Regeneration Harvest	142	2	132	2	77	1
Low Severity/Jackpot Fire	143	2	651	15	300	5
Mixed Severity Fire	1,207	19	571	9	296	5
Total	**2,402**	**38**	**1,685**	**27**	**1,288**	**20**
Construction of roads that would be used and then obliterated after timber removal	1.4 miles		0.1 miles		0.3 miles	
Foraging Habitat						
Intermediate Harvest	346	8	93	2	224	6
Regeneration Harvest	82	2	79	2	49	1
Low Severity/Jackpot Fire	156	4	532	12	328	7
Mixed Severity Fire	1,033	23	361	8	234	6
Total	**1,617**	**36**	**1,065**	**24**	**835**	**21**
Construction of roads that would be used and then obliterated after timber removal	1.0 miles		0.1 miles		0.1 miles	

Table 27: Remaining Goshawk habitat by alternative

Habitat	Alternative 2		Alternative 3		Decision	
	Acres	Percent of Existing Habitat	Acres	Percent of Existing Habitat	Acres	Percent of Existing Habitat
Nest[1]	5,897	93	6,017	95	6,131	98
Nest over 40 acres	3,881	95	3,881	95	4,002	99
Foraging Habitat[1]	3,761	85	4,184	94	4,095	92
1 –See goshawk methodology for a description of nesting and foraging habitat.						

The Decision maintains 92 percent of the available foraging habitat, similar to the 94 percent maintained under alternative 3. Changes in prey availability are as described in the final environmental impact statement.

Landscape Considerations

The landscape level changes under the Decision would fall between alternatives 2 and 3 in terms of acres, however will be similar in terms of percentage. This is discussed in the final environmental impact statement.

Post-fledgling Habitat

Table 28 displays treatments proposed under the Decision in the Stonewall East and Stonewall West post-fledgling areas. The habitat conditions within the respective post-fledgling areas are the same as that displayed for alternatives 2 and 3 in the final environmental impact statement. The Decision eliminates harvest in the Stonewall east post-fledgling areas and reduces the amount of harvest in the Stonewall West post-fledgling areas to seven acres (two percent). While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 28: Active nest post-fledgling areas habitat treated

Size Class/Habitat Condition	Stonewall East			Stonewall West		
	Alternative 2	Alternative 3	Decision	Alternative 2	Alternative 3	Decision
	Acres (%)	Acres (%)	Acres (%)	Acres (%)	Acres (%)	Acres (%)
Prescribed Fire	126 (30%)	126 (30%)	137 (33%)	0 (0%)	0 (0%)	0 (0%)
Intermediate Harvest	0 (0%)	0 (0%)	0 (0%)	8 (2%)	8 (2%)	0 (0%)
Regeneration Harvest	12 (3%)	12 (3%)	2 (less than 1%)	20 (5%)	20 (5%)	7 (2%)

The reduction in mature and young forest due to proposed regeneration harvest and openings created by mixed severity burning is reduced under the Decision to two acres in the Stonewall East post-fledgling areas and seven acres in the Stonewall West post-fledgling areas. The effects are as described in the final environmental impact statement although the magnitude is much reduced under the Decision.

Cumulative Effects and Forest Plan Consistency

An additional 385 acres of nesting habitat and 191 acres of foraging habitat would be removed from the cumulative effects analysis area due to the harvest on state lands. This results in up to 1,673 acres (20 percent) of the nest habitat and 1,026 acres (21 percent) of the foraging habitat affected. While the amount and distribution of habitat would change, remaining habitat would continue to occur within all affected watersheds and adequate habitat would continue to exist to support three to four nesting pairs of goshawk. There would be no changes to the post-fledgling areas acres. The Forest Plan Consistency described in the final environmental impact statement remains the same for the goshawk.

Pileated Woodpecker

Effects to pileated woodpeckers are based on the amount of potential habitat treated in the Decision and effects to snags and down woody debris. While the analysis completed in the final environmental impact statement remains applicable for the Decision, some of the calculations have changed and are reported here.

The Decision does not include treatments in Forest Plan designated old-growth habitat and preferred stand structure will continue to occur in designated and potential old growth. Table 29 displays project area treatments proposed under the action alternatives.

Table 29: Alternative treatments within pileated and hairy woodpecker habitat[1]

Treatments	Alternative 2		Alternative 3		Decision	
	Acres	Percent	Acres	Percent	Acres	Percent
Intermediate Harvest	1,077	14	427	6	778	10
Regeneration Harvest	184	2	162	2	88	1
Low Severity Fire	182	2	611	8	239	3
Mixed Severity Fire	1,407	18	758	10	349	5
Jackpot Burn	0	0	124	2	124	2
Total within treatment units	2,850	36	2,082	26	1,578	21
Total unaffected habitat[2]	5,247	67	6,018	77	6,132	79

[1]-Because there is only a 17 acres difference in pileated and hairy woodpecker habitat and this acreage is outside any treatment area, the affected habitat for these two species is discussed collectively.

[2]-Includes unburned land within prescribed burning units.

Direct and Indirect Effects

Table 29 summarizes the effects to pileated woodpecker habitat in the Decision. Approximately 1,578 acres of potential pileated woodpecker habitat will be treated in the Decision compared to 2,850 acres in alternative 2 and 2,082 acres in alternative 3. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. The Decision includes slightly more harvest activity than alternative 3 (277 acres more) and just over 400 acres less mixed severity fire treatments, therefore the effects described in the final environmental impact statement for alternative 3 are applicable to the Decision.

Forest Plan Consistency

The Decision is consistent with the Forest Plan as described in the final environmental impact statement discussion for alternatives 2 and 3.

Cumulative Effects

Harvest of state lands results in a total of 1,333 acres of suitable habitat affected by past, ongoing and future activities. This increases the acres affected cumulatively to just under 3,000 acres, below that analyzed for alternatives 2 and 3. The cumulative effects described in the final environmental impact statement remain the same for pileated woodpeckers.

Hairy Woodpecker

Effects to hairy woodpeckers are based on the amount of potential habitat treated in the Decision (Table 29) and effects to snags. The analysis completed in the final environmental impact statement for alternative 3 remains applicable for the Decision, as described for pileated woodpecker above.

Cumulative Effects and Forest Plan Consistency

The cumulative effects and Forest Plan Consistency described in the final environmental impact statement change as described above for pileated woodpecker, with an additional 620 acres of hairy woodpecker habitat affected by state land harvest.

American Marten

Effects to martens are based on the amount of potential habitat treated in the Decision and effects to snags and down woody debris. While the analysis completed in the final environmental impact statement remains applicable for the Decision, some of the calculations have changed and are reported here.

Direct and Indirect Effects

Table 30 displays existing American marten habitat proposed for treatment under the action alternatives and the Decision, whereas these treatments are summarized in Table 31.

Table 30: Alternative treatments in American Marten Habitat

Treatments	Alternative 2		Alternative 3		Decision	
	Acres	Percent[1]	Acres	Percent[1]	Acres	Percent[1]
Intermediate Harvest	914	13	335	5	619	11
Regeneration Harvest	143	2	133	2	78	1
Low Severity Fire	152	2	531	8	300[2]	4
Mixed Severity Fire	1,265	19	598	9	311	5
Total	**2,474**	**36**	**1,597**	**24**	**1,308**	**20**

[1]-Percent of available habitat
[2]-Includes jackpot burn acres

Table 31: Post-treatment effects to marten habitat by alternative

Treatments	Alternative 2		Alternative 3		Decision	
	Acres	Percent[1]	Acres	Percent[1]	Acres	Percent[1]
Acres Treated	2,474	36	1,597	24	1,308	20
Habitat Reduced[2]	459	7	283	4	156	2
Reduction in habitat quality[3]	1,731	26	1,088	16	996	15
Unaffected Habitat	4,313	64	5,071	75	5,494	82

1-Percent of available habitat
2-Includes regeneration harvest and acreage of openings created by mixed-severity fire
3-Includes under-burning, intermediate harvest, and lands affected by low severity burning. Additional acres in the mixed severity burning that will be unburned are not included here.

Approximately 1,308 acres of potential habitat will be treated in the Decision compared to 2,474 acres in alternative 2 and 1,597 acres in alternative 3. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to habitat losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement. Suitable marten habitat would be reduced by two percent due to proposed regeneration harvest and openings created by mixed severity burning. Low severity burning and intermediate treatments reduce habitat quality on 15 percent of marten habitat. This is slightly less than changes from alternative 3.

Forest Plan Consistency

Forest Plan standards applicable to martens include the requirement to monitoring the effects of management activities on their habitat. These efforts are described in the *Forest Plan Evaluation and Monitoring Reports*. Snag standards are also applicable; see *Forest Plan* snag standards.

Cumulative Effects

In addition to the cumulative effects described in the final environmental impact statement, the state lands harvest removed an additional 385 acres of potential marten habitat. In total under the decision approximately 1,693 acres of marten habitat is affected, or less than analyzed for alternatives 2 and 3. The discussion of cumulative effects remains the same for martens.

Big Game – Elk

Several factors are considered in analyzing effects to elk. These include: summer range hiding cover and habitat effectiveness, elk vulnerability during the hunting season, and effective winter range. While the overall analysis completed in the final environmental impact statement and *Wildlife Resource Report and Biological Evaluation* remains applicable for the Decision, some of the calculations have changed associated with the decision and due to habitat changes associated with the Sucker Creek and Klondike wildfires[8]. See the final environmental impact statement for in-depth analyses.

Other updates in the following analysis are either based on comments received during the objection period or are intended to provide additional clarification. These include:

- Calculations for hiding cover were revised to reflect public comments. The analysis in the final environmental impact statement was based on the assumption that in those units where intermediate harvest did not reduce canopy cover below 40 percent, hiding cover would be retained (based on the definition of hiding cover as comprising stands with 40 percent or more canopy cover). The Decision is based on the assumption that all harvest, including intermediate harvest, removes hiding cover.
- Low severity prescribed fire is assumed to retain thermal cover properties. The Forest Plan defines thermal cover as a stand of coniferous trees 40 feet or more tall with an average crown closure of 70 percent or more, and a minimum size of 15 acres. Based on currently available vegetation mapping (VMap) this analysis uses stands 40 feet or taller with a canopy closure of 60 percent and a minimum size of 15 acres to describe thermal cover. As described in the final environmental impact statement (USDA 1986, p. 358), low severity fire is expected “to consume the litter, fine fuels and small diameter trees and shrubs less than five inches in diameter (Bowles

[8] Note that habitat information for alternatives 2 and 3 is not presented in the elk habitat tables because those acres are no longer comparable with the post-fire existing condition and by extension the Decision. Habitat effectiveness and security information for all alternatives and the Decision are presented in the respective tables since these data are unaffected by the Sucker Creek and Klondike Fires.

et al. 2007); it generally would not be hot enough to scorch the soil or result in mortality of over-story trees on most of the area burned.". Low severity fire is assumed to remove hiding cover since small diameter trees that would be affected by this type of prescribed fire would otherwise provide hiding cover for elk.

- Mixed severity fire is assumed to remove both thermal and hiding cover.
- Habitat effectiveness is generally calculated at the elk herd unit scale. Christensen et al. 1993 (page 2) indicate that the herd unit is an appropriate scale at which to conduct a habitat effectiveness analysis. However, in order to be responsive to comments raised during the objection process, habitat effectiveness is calculated for the project area and by management area.
- Habitat effectiveness and elk security metrics are used as analysis tools for the purposes of assessing effects of the project on elk habitat (USDA 1986, p.314). This is in keeping with the Framework for Project-Level Effects Analysis on Elk which states that this framework " does not replace forest plan standards or pre-existing rights, nor does it give further definition to any current direction provided in the Custer, Gallatin, Helena or Lewis and Clark Forest Plans" (USDA 2013, page 3).

Direct and Indirect Effects

Summer Range Hiding Cover

Table 32 summarizes the effects to hiding cover in the Decision compared with the existing condition, pre- and post-Sucker Creek and Klondike Fires. Approximately - 3,367 acres of hiding cover will be treated in the Decision in the Beaver Creek herd unit and 916 acres of hiding cover will be treated in the Keep Cool herd. Alternative 2 includes the treatment of 5,211 acres of hiding cover in the Beaver Creek herd unit and 2,208 in the Keep Cool herd unit. Alternative 3 includes the treatment of 3,898 acres of hiding cover in the Beaver Creek herd unit and 1,560 in the Keep Cool herd unit. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to hiding cover losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 32: Acres (percent) of remaining* elk hiding cover on summer range by elk herd unit in the existing condition and Decision and Forest Plan (FP) consistency.

Parameter	Existing Condition – Pre Fire		Existing Condition Post Fire		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Elk Hiding Cover acres (percent)	18,183 (56%)	15,607 (35%)	18,021 (56%)	13,968 (32%)	14,451 (45%)	12,964 (29%)
Meets Forest Plan Standard 3	Yes	No	Yes	No	No	No
*In order to qualify as Forest Plan elk hiding cover, patches of hiding cover must be at least 40 acres in size.						

Summer Range Habitat Effectiveness

Habitat effectiveness is based on open road density and provides a measure of the extent to which roads erode the availability of otherwise suitable habitat on elk summer range (Christensen et al. 1993). Open road density is translated to habitat effectiveness via a curve derived from Perry and Overly (1977) and the Montana Cooperative Elk-Logging Study (Lyon 1979). Habitat effectiveness is not a Forest Plan standard.

Habitat effectiveness in the Decision will remain the same as alternatives 2 and 3 even though there are fewer road miles used during implementation in the Decision, i.e. 170.4 miles vs. 174.2 miles (Table 33). The road density, and hence percent of habitat effectiveness, is the same in the Beaver Creek herd unit during project implementation between the action alternatives and the Decision due to rounding.

Table 33: Elk herd unit summary of habitat effectiveness by alternative

Parameter	Alternative 1		Alternative 2		Alternative 3		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Road Miles	159.9	189.6	159.9[1] (174.2)[2]	189.6[1] (189.6)[2]	159.9[1] (174.2)[2]	189.6[1] (189.6)[2]	159.9[1] (170.4)[2]	189.6[1] (189.6)[2]
Square Miles	50.6	69.3	50.6	69.3	50.6	69.3	50.6	69.3
Open Road Density in mi/mi^2	3.2	2.7	3.2[1] (3.4)[2]	2.7[1] (2.7)[2]	3.2[1] (3.4)[2]	2.7[1] (2.7)[2]	3.2[1] (3.4)[2]	2.7[1] (2.7)[2]
Habitat Effectiveness Percent	37%	41%	37%[1] (35%)[2]	41% (41%)[2]	37% (35%)[2]	41%[1] (41%)[2]	37%[1] (35%)[2]	41%[1] (41%)[2]

[1] - Post implementation

[2] - During implementation (includes temporary roads and closed roads used for haul and administrative use)

Christensen et al. 1993 recommend that habitat effectiveness percentages be based on overall objectives and goals of the land base in question (Christensen et al. 1993 page 3 and final environmental impact statement page 323). There are six management areas within the Stonewall project boundary with the following goals:

- T-1 – Provide healthy timber stands and optimize timber growing potential over the planning horizon. Emphasize cost-effective timber production, while protecting the soil productivity. Maintain water quality and streambank stability. Provide for dispersed recreation opportunities, wildlife habitat, and livestock use, when consistent with the timber management goals.
- T-2 – Provide for the maintenance and enhancement of big game winter range. Harvest timber on a programmed basis, consistent with big game winter range values. Emphasize cost-effective timber production, while protecting the soil productivity. Maintain water quality and streambank stability. Provide for other uses as long as these uses are compatible with timber and big game winter range management goals.
- T-3 – Maintain and/or enhance habitat characteristics favored by elk and other big game species. Provide healthy timber stands and a timber harvest program compatible with wildlife habitat

goals for this area. Emphasize cost-effective timber production, while protecting the soil productivity. Maintain water quality and streambank stability. Provide for other resource objectives where compatible with the big game summer range and timber goals.

- T-4 – Maintain healthy stands of timber within the visual quality objective of retention and partial retention. Provide for other resource uses as long as they are compatible with visual quality objectives. Emphasize cost-effective timber production, while protecting the soil productivity. Maintain water quality and streambank stability.
- W-1 – Optimize wildlife habitat potential, including old growth, over the long term. Provide for other resource uses, if they are compatible with wildlife management goals.

Table 34 summarizes habitat effectiveness by management area during and post-project implementation. Note that W-1 is the only management area with a total wildlife emphasis. All other management areas either have multiple goals of which wildlife is one (M-1, T-2, T-3) or no wildlife goals at all (T-1, T-4). T-2, in particular, includes an emphasis on big game winter range for which habitat effectiveness measurements are not applicable (since habitat effectiveness is a measure of summer range).

Therefore, in keeping with Christensen et al. (1993, page 3), W-1 is the only management area within which a goal of 70 percent or greater habitat effectiveness would be practical given its wildlife emphasis. Habitat effectiveness in W-1 is 80 percent during and post project implementation. Habitat effectiveness in M-1 is 72 percent during and post project implementation; T-3 is 53 percent during project implementation and 61 percent post project implementation, again both management areas in keeping with Christensen et al. (*Ibid*) recommendations that areas within which elk are a primary resource, habitat effectiveness should be at least 50 percent. T-2 at 14 percent and 19 percent habitat effectiveness during and post project implementation respectively is not governed by summer range goals and therefore habitat effectiveness is not applicable. T-1 and T-4 remain below 50 percent habitat effectiveness during and post project implementation; these management areas are not expected to contribute to elk management goals.

Table 34: Management area summary of habitat effectiveness by existing condition and the Decision

Parameter	Management Area					
	M-1	**T-1**	**T-2**	**T-3**	**T-4**	**W-1**
Square Miles	12.6	4.1	2.5	8.8	1.4	7.3
Road Miles	8.0[1] (8.0)[2]	12.0[1] (12.4)[2]	12.3[1] (13.9)[2]	7.9[1] (15.1)[2]	8.5[1] (9.8)[2]	2.8[1] (2.8)[2]
Open Road Density during the summer (mi/mi^2)	0.6[1] (0.6)[2]	2.9[1] (3.0)[2]	4.9[1] (5.6)[2]	0.9[1] (1.7)[2]	6.1[1] (7.0)[2]	0.4[1] (0.4)[2]
Habitat Effectiveness Percent	72%[1] (72%)[2]	39%[1] (38%)[2]	19%[1] (14%)[2]	61%[1] (53%)[2]	11%[1] (10%)[2]	80%[1] (80%)[2]

[1]Post implementation

[2]During implementation (includes temporary roads and closed roads used for haul and administrative use)

Habitat effectiveness at the project boundary scale is at 52 percent during project implementation and 54 percent post project implementation, in keeping with the recommendations that areas within which elk are a primary resource, habitat effectiveness should be at least 50 percent (Christensen et al. 1993).

Winter Range Thermal Cover

Table 35 summarizes the effects to thermal cover in the Decision compared with the existing condition, pre- and post-Sucker Creek and Klondike Fires. Approximately 293 acres of thermal cover on winter range would be treated in the Decision in the Beaver Creek herd unit of which five acres would be treated with low severity prescribed fire. Approximately 104 acres of thermal cover on winter range would be treated in the Keep Cool herd unit none of which are low severity prescribed fire treatments. Alternative 2 includes treatment on 374 acres of thermal cover on winter range in the Beaver Creek herd unit and 174 acres in the Keep Cool herd unit. Alternative 3 includes treatment on 366 acres of thermal cover on winter range in the Beaver Creek herd unit and 104 acres in the Keep Cool herd unit. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to thermal cover losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 35: Acres (percent) of remaining* elk thermal cover on winter range by elk herd unit in the Decision and Forest Plan (FP) consistency

Parameter	Existing Condition – Pre Fire		Existing Condition Post Fire		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Winter Range Thermal Cover acres (percent)	938 (5%)	527 (4%)	938 (5%)	471 (3%)	598 (3%)	353 (3%)
Meets Forest Plan Standard 3	No	No	No	No	No	No
*In order to qualify as Forest Plan elk thermal cover, patches of thermal cover must be at least 15 acres in size.						

Open Road Densities (Hunting Season)

Table 36 summarizes the effects to hiding cover/open road densities in the Decision. Approximately 3,367 acres of hiding cover would be removed in the Decision in the Beaver Creek herd unit and 916 acres of hiding cover would be removed in the Keep Cool herd. Alternative 2 includes the removal of 5,211 acres of hiding cover in the Beaver Creek herd unit and 2,208 in the Keep Cool herd unit. Alternative 3 includes the removal of 3,898 acres of hiding cover in the Beaver Creek herd unit and 1,560 in the Keep Cool herd unit. Open road densities during implementation of alternative 2 are 1.7 and 1.3 mi/mi2 for the Beaver Creek and Keep Cool herd units, respectively. In alternative 3, open road densities during project implementation are 1.6 and 1.3 mi/mi2 for the Beaver Creek and Keep Cool herd units, respectively. While the alternative 2 and 3 calculations are not directly comparable to the Decision due to hiding cover losses associated with the Sucker Creek and Klondike Fires, the comparison is useful in pointing out that the effects described in the Decision are within the bounds of those described in the final environmental impact statement.

Table 36: Hiding cover and open road densities by herd unit in the existing condition and Decision

Parameter	Alternative 1		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Open Road Density mi/mi^2	1.4	1.3	1.4[1] (1.7)[2]	1.3[1] (1.3)[2]
Percent Hiding Cover (Post-Fire)	56%	32%	45%	29%
Meets Forest Plan Standard 4a	No	No	No	No

Hunting Season Elk Security

Elk security during the hunting season is based on the size and distribution of elk security areas within a large geographic area. Specifically, elk security in the Stonewall project is described as comprising 1,000 acres in size greater than or equal to ½ mile from a motorized route open to the public between September 1st and December 1st. Elk security, as described here, is not a Forest Plan standard.

Table 37 summarizes the effects to elk security in the Decision. Under the Decision, the percent of elk security within each herd unit during project implementation is the same as alternative 3; therefore the effects of the Decision are as described for alternative 3 in the final environmental impact statement.

Table 37: Hunting season elk security

Parameter	Alternative 1		Alternative 2		Alternative 3		Decision	
	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit	Beaver Creek Herd Unit	Keep Cool Herd Unit
Security Habitat Post Implementation acres (%)	8,144 (41%)	10,929 (36%)	8,144 (41%)	10,929 (36%)	8,144 (41%)	10,929 (36%)	8,144 (41%)	10,929 (36%)
Security Habitat During Implementation (%)	NA	NA	7,065 (35%)	10,920 (36%)	7,268 (36%)	10,920 (36%)	7,268 (36%)	10,920 (36%)
*Note that security during the hunting season is based on the portion of the elk herd unit within the administrative boundary (See the final environmental impact statement, page 318).								

Cumulative Effects

State lands harvest has resulted in removal of both hiding cover and thermal cover in addition to that analyzed in the final environmental impact statement. In the Beaver Creek herd unit an additional reduction in 287 acres of hiding cover results in 44 percent hiding cover while in the Keep Cool herd unit an additional reduction of 625 acres of hiding cover results in 28 percent hiding cover. Winter range thermal cover is reduced by an additional 25 acres in the Keep Cool herd unit due to harvest on state lands, resulting in 2.4 percent thermal cover. It is unlikely such a small cumulative change would impact

elk population numbers in the Keep Cool herd unit. There is no change to summer range habitat effectiveness, open road density, hunting season elk security, or forage/calving areas from the cumulative effects described in the final environmental impact statement and *Wildlife Resource Report and Biological Evaluation* remain applicable for the Decision. See those reports for in-depth analyses.

Forestwide Forest Plan Consistency

Forest Plan Standard 3

Hiding Cover – Using the Montana Fish, Wildlife and Parks definition, Forest Plan standard 3 (USDA 1986 p. II/17) requires that elk summer range will be maintained at 50 percent or greater hiding cover. Under alternative 1, the Beaver Creek herd unit meets standard 3 at 56 percent hiding cover (despite hiding cover loss associated with the Klondike Fire); the Keep Cool herd unit is below standard 3 thresholds at 32 percent hiding cover (compared with 35 percent hiding cover prior to the Sucker Creek Fire). The Decision will result in the removal of hiding cover such that the Beaver Creek herd unit will decrease to 44 percent hiding cover and the Keep Cool herd unit to 28 percent hiding cover (which includes cumulative effects considerations). Both herd units will be below the 50 percent hiding cover threshold needed for consistency with standard 3. This situation is addressed in the site-specific Forest Plan amendment.

Thermal Cover – Forest Plan standard 3 (USDA 1986 p. II/17) also requires that elk thermal cover be provided on 25 percent of the winter range within each herd unit. Both the Beaver Creek and Keep Cool Creek herd units are currently below this threshold at 5 percent and 3 percent thermal cover, respectively, on winter range. Under the Decision, thermal cover will drop to 3 percent in the Beaver Creek herd unit on winter range and to 2 percent in the Keep Cool herd unit, on winter range (which includes cumulative effects considerations). This situation is addressed in the site-specific Forest Plan amendment.

Forest Plan Standard 4a

Forest Plan Standard 4a (USDA 1986 pp. II/17-18) requires that an aggressive road management program be implemented to maintain or improve big game security. Specifically, road management will be implemented to at least maintain big game habitat capability and hunting opportunity, which is measured by the relationship between hiding cover and open road densities. Due to existing high open road densities and in the case of the Keep Cool herd unit a low percentage of hiding cover, neither herd unit is currently consistent with Forest Plan standard 4a. While open road densities will remain unchanged upon completion of the project, the reductions in hiding cover associated with the Decision will cause both herd units to further depart from the standard 4a thresholds. This situation is addressed in the site-specific Forest Plan amendment.

Forest Plan Standard 4b

Forest Plan standard 4b (Forest Plan p. II/18) requires that elk calving grounds and nursery areas be closed to motorized vehicles during peak use by elk. This is usually from late May through July. If elk calving and nursery areas are identified prior to or during project implementation, these areas would be protected under the Decision (see project design feature WL-13 ELK).

Forest Plan Standard 4c

Forest Plan standard 4c (Forest Plan p. II/18) requires that all winter ranges be closed to vehicles between December 1 and May 15, with the exception of access through winter range to facilitate land management on other lands. Logging activities will be scheduled outside of the winter season (i.e. December 2 to May 16) on winter range to address this standard, although hauling on roads through winter range may occur. The Decision is consistent with standard 4c.

Forest Plan Standard 5

On elk summer range the minimum size area for hiding cover will be 40 acres and the minimum size area on winter range for thermal cover will be 15 acres (USDA 1986 p. II/19). All analyses of hiding and thermal cover comply with these minimum size limits, as described in methodology. The Decision is consistent with standard 5.

Forest Plan Standard 6

Forest Plan standard 6 (USDA 1986 p. II/19 and pp. C/1 – 11) requires that the recommendations embodied in the Montana Cooperative Elk-Logging study (appendix C of the Forest Plan) be followed during timber sale and road construction projects. There are a total of eleven recommendations some of which have been incorporated as project design features. The following narrative describes the project's consistency with each of the eleven recommendations.

1. *Security during logging operations* – The Decision is consistent with this recommendation. Design features have been incorporated that confine logging to a single drainage at a time to minimize disturbance to elk (WL-14 Elk). Also, logging activities will be completed in the shortest time frame possible. Use of firearms would be prohibited for anyone working within an area closed to the general public (WL-18 Elk).
2. *Redistribution of elk* – The Decision is consistent with this recommendation. This recommendation is intended to plan timber sales in a manner that does not redistribute elk onto adjacent or nearby property. While elk movement will change during treatment, the Decision restricts timber harvest to a single drainage at a time to reduce displacement of elk; the Decision also restricts public access on temporary roads and closed roads used for hauling. It is not expected that changes in elk movement would result in impacts to private land. Therefore, the Decision is consistent with this recommendation.
3. *Traditional home range use by elk* – This recommendation is intended to ensure that timber harvest and road construction are planned to minimize impacts to elk and elk hunting. The Decision is consistent with this recommendation since all constructed roads will be closed to the public during logging operations and decommissioned post-implementation. Also there will be no changes in public access during implementation on temporary roads or closed roads that will be used for hauling.
4. *Road construction and design* – This recommendation is intended to maintain the integrity of elk movement patterns and provide security for unimpeded movement. There are slight decreases in elk security during project implementation in terms of road use during project implementation; however, there would be no reduction in security following implementation. All constructed roads would be closed to the public during implementation and decommissioned afterwards. The Decision is consistent with this recommendation.
5. *Road management* – This recommendation is also intended to maintain elk security through management of road densities. Implementation of the Decision will result in a short-term (five years or less) increase in road density during implementation. New roads will not be opened to the public. Elk security will be maintained over the long-term; the Decision is consistent with this recommendation.
6. *Area closures during the hunting season* – This recommendation is intended to ensure that travel restrictions are carefully considered relative to elk management objectives so that hunting opportunities aren't unnecessarily impacted. There will be no changes in travel restrictions under the Decision and secure areas will continue to be available. The Decision is consistent with this recommendation.
7. *Clearcuts* – This recommendation is intended to ensure that forage produced through clear-cutting is available to elk. The Decision is consistent with these considerations since slash be no taller than 1.5 feet in regeneration harvest units (project design feature WL-19 Elk), and there will

be no change in public access. Opening size limitations of 100 acres will also be met since there are no regeneration harvest units or groups of larger than 100 acres.

8. *Cover type* – This recommendation is intended to ensure that cover types, important to elk, are considered during planning and implementation of silvicultural practices. The Decision is consistent with this recommendation since cover type data is available Forestwide (via R1-VMap) and has been used to identify and assess cover and forage.
9. *Moist sites* – This recommendation is intended to ensure that the integrity of moist sites is maintained since these areas comprise important components of elk habitat. The Decision is consistent with this recommendation; wetlands, riparian areas, and elk wallows will be buffered and protected during implementation (project design feature WL-15 Elk).
10. *Elk/cattle relationships* – This recommendation is intended to ensure that forage may be created as a result of timber harvest remain available to elk. The Decision is consistent with this as grazing patterns or use will be modified if necessary to protect highly preferred forage species (project design feature WL-11 Vegetative Diversity).
11. *Winter range* – This recommendation states that timbered areas adjacent to primary winter foraging areas should be managed to maintain the integrity of cover, and timber harvest should be scheduled outside of the winter period. The Decision is consistent with this recommendation since there will be no winter logging in elk winter range and forested areas would remain adjacent to forage areas following treatment.

Management Area Forest Plan Consistency

Table 38 summarizes the changes to hiding and thermal cover by management area due to the Sucker Creek and Klondike Fires and how the Decision affects those acres. The fires did not affect hiding cover in T-3 or thermal cover on winter range in W-1. This is followed by a consistency analysis for the Decision for those management area standards applicable to wildlife.

Table 38: Effects to hiding and thermal cover by management area in the Decision

Parameter	Existing Condition Pre Fire	Existing Condition Post Fire	Decision
T-2 - Thermal Cover Acres (percent) on Winter Range[1] in the Project Area	251 (16%)	251 (16%)	145 (9%)
T-3 - Hiding Cover[2] Acres (percent)	5,159 (91%)	5,519 (91%)	4,517 (80%)
W-1 - Thermal Cover Acres (percent) on Winter Range[3] in the Project Area	43 (22%)	43 (22%)	43 (22%)

[1]There are 1,559 acres of winter range in T-2 in the project area.
[2]There are 5,649 acres of T-3 in the project area.
[3]There are 198 acres of winter range in W-1 in the project area.

Management Area T-2 Standards (Forest Plan pp. III/34-37)

"Maintain adequate thermal cover and hiding cover adjacent to forage areas. Generally this means providing 25 percent thermal cover on identified winter range." Thermal cover in T-2 on winter range in the project area is reduced in the Decision from 251 acres (neither the Sucker Creek nor Klondike Fire burned in T-2) to 145 acres (16 percent to 9 percent). The Decision is inconsistent with this standard. This situation is addressed in the site-specific Forest Plan amendment.

"Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested." Several treatment units in the Decision are adjacent to openings created by past timber harvest that currently do not provide hiding cover. This situation is addressed in the site-specific Forest Plan amendment.

"Schedule sale activities outside the winter periods (December 1 to May 15)." Winter logging is not scheduled in elk winter range during the winter period; therefore the Decision is consistent with standard.

"No more than 25 percent of the timber-perimeter around natural or artificial parks should be non-thermal cover at one time." There are no natural or artificial parks in T-2 so this standard is not applicable (Figure 19).

Figure 19: Management Area T-2
note the absence of either natural or artificial parks

Management Area T-3 Standards (Forest Plan pp. III/38-41)

"Wildlife habitat improvement practices, including road management, prescribed fire and other techniques, may be used to maintain and/or enhance the quality of big game summer habitat." The Decision is consistent with this standard as new roads will be closed to public use and decommissioned following implementation; and, prescribed fire would improve forage palatability and production in big game summer ranges.

"Maintain [50] *percent hiding cover* [Montana Fish, Wildlife and Parks definition] *for big game."* Hiding cover in the Decision in T-3 is reduced from 5,519 acres to 4,517 acres (91 percent to 80 percent). The Decision is consistent with this standard.

"Maintain thermal cover adjacent to forage areas." Thermal cover is currently adjacent to forage areas and although it is slightly reduced through the Decision, forage areas will continue to be ringed by thermal cover. The Decision therefore is consistent with this standard.

"Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested." Several treatment units in the Decision are adjacent to openings created by past timber harvest that currently do not provide hiding cover. This situation is addressed in the site-specific Forest Plan amendment.

Management Area W-1 Standards (Forest Plan pp. III/50-52)

"Wildlife habitat improvement practices, including road management, prescribed fire and other techniques, may be used to maintain and/or enhance the quality of big game summer habitat." The Decision is consistent with this standard as new roads will be closed to public use and decommissioned following implementation; prescribed fire will improve forage palatability and production in big game summer ranges.

"Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing 25 percent thermal cover, where available, on identified winter range." Existing thermal cover on winter range in W-1 is 22 percent. Although thermal cover is below the Forest plan standard, the Decision does not affect any thermal cover on winter range in W-1. Therefore the Decision is consistent with this standard.

Big Game – Mule Deer

Direct and Indirect Effects

The impacts to mule deer habitat under the Decision are similar to those described for alternative 3. The changes described for elk are also applicable to mule deer. The Decision treats approximately the same number of acres by harvest and mixed severity burning as alternative 3, and effects are as described in the final environmental impact statement.

Cumulative Effects and Forest Plan Consistency

The cumulative effects and Forest Plan Consistency described in the final environmental impact statement remain the same for the mule deer, with an additional reduction of 912 acres of hiding cover and 25 acres of thermal cover in the cumulative effects analysis area.

Migratory Birds

The effects to Migratory birds are as described in the final environmental impact statement.

Viability

The Sucker Creek and the Klondike Fires affected habitat of several species in the Stonewall project area. The Sucker Creek Fire (approximately 3,060 acres of which 2,435 burned) burned primarily outside of the project boundary; the Klondike Fire (approximately 550 acres of which 253 acres burned) burned entirely within the project boundary. Despite the loss of habitat associated with these fires, there are no changes in effects to viability in the Decision compared to the effects described in the final environmental impact statement, appendix E. Table 39 summarizes the post-fire habitat conditions for selected species

as well as the effects associated with the Decision. Forestwide, habitat will continue to remain above critical thresholds identified by Samson (2006). Acres of habitat treated for goshawks, black-backed and pileated woodpeckers, fisher, and martens will not result in a breach of those thresholds. Viability for wolverines, elk, mule deer, and hairy woodpeckers, among others, will also remain sound. The conclusions described in the final environmental impact statement (appendix E) and the *Wildlife Resource Report and Biological Evaluation* are applicable to the Decision.

Table 39: Summary[1] of habitat thresholds (acres) to maintain minimum viable populations

Species	Critical Habitat Thresholds from Samson (2006)	Current Habitat Estimates for the Helena National Forest based on Intensified Grid Data[2]
Northern Goshawk	133,436[3] (nesting and foraging)	362,645 (nesting and foraging)
Black-backed Woodpecker	29,405	111,087[4]
Flammulated Owl	8,895	27,895
Pileated Woodpecker	91,923[2]	195,271
American Marten	3,459	288,257
Fisher	74,378	185,972 (summer and winter)[5]

Current habitat estimates are based on the Helena National Forest Summary Database (Accessed November 30, 2015).

[2]Estimates are derived by multiplying the percentage of forested data points identified as a given species habitat by the total forested acres on the Helena National Forest (approximately 929,860 acres according to updated ownership and grid data).

[3]Samson (2006) critical habitat thresholds for goshawks and pileated woodpeckers does not distinguish between nesting or foraging habitat but rather provides total habitat estimates based on the respective species' needs at the home range scale which includes both nesting and foraging habitat. Estimates reported here reflect the foraging calculations since the forage habitat includes the nest habitat for both species. In other words, the nest habitat is a subset of the foraging habitat.

[4]Estimates of black-backed woodpecker habitat are based on data contained in the 2012 internal report Geospatial Post-Burn Habitat Analysis for the Helena National Forest. That report indicates that there are 103,699 acres of forest within the Helena National Forest that burned between 1999 and 2010. An additional 4,700 acres have burned since 2010 (Source: Fire History spatial data located electronically at T:\FS\Reference\GIS\r01_hel\LayerFile) – not counting the Sucker Creek and Klondike Fires - totaling 108,399 acres of burned forest created between 1999 and present. (Some of these burned areas may no longer provide black-backed woodpecker habitat, however.) The Sucker Creek and Klondike Fires have added an additional 2,688 acres of burned forest that would contribute to black-backed woodpecker habitat for a total of 111,087 acres Forestwide. Samson's (2006) habitat estimates include both insect and fire-created habitats. Therefore the figures reported as black-backed woodpecker habitat on the Helena National Forest underestimate the available habitat as described by Samson (2006).

[5]The viability analysis utilizes the fisher habitat criteria described in the Criteria for Wildlife Models on the Helena National Forest (USDA 2009). The criteria utilized for the effects analysis in the final environmental impact statement are based on a refined model developed at the Region One scale (USDA 2012). Parameters are similar between the two sets of criteria; specifically, both models utilize a minimum canopy closure of 40 percent, tree size class including trees greater than 10 inches diameter-at-breast-height, and potential climax vegetation preferred by fishers. The updated model also includes a maximum elevation of 6,500 feet, patch sizes of 160 acres or

Species	Critical Habitat Thresholds from Samson (2006)	Current Habitat Estimates for the Helena National Forest based on Intensified Grid Data[2]
more, and distance between patches (patches greater than 600 feet from the nearest existing habitat are eliminated). So, while the model used in the viability analysis is broader than that used for the analysis, it serves the purpose of assessing available habitat Forestwide relative to Samson's estimates for viable populations. Furthermore, Samson (2006) critical habitat thresholds does not distinguish between summer and winter habitat but rather provides total habitat estimates based on the respective species' needs at the home range scale which includes both summer and winter habitat. Estimates reported here reflect the winter calculations since the winter habitat includes the summer habitat. In other words, the summer habitat is a subset of the winter habitat.		

This table gives a sense of the factors important to maintaining viability some of the management indicator species in the project area that are particularly vulnerable to habitat loss. At present, the primary factor influencing the viability and quality of habitat for these species is the mountain pine beetle outbreak, which has killed lodgepole and ponderosa pine trees over hundreds of thousands of acres on the Forest. Long-term population viability for these species will be determined by their ability to adapt to the new habitat configurations and to maintain a persistent, if somewhat modest presence, in Helena National Forest landscapes until forests recover their former structure.

Forestwide habitat continues to remain above critical thresholds for the species identified in Table 39 even considering habitat removal associated with the Decision. Acres of habitat treated for these species will not result in a breach of the critical thresholds. Therefore, viability for these species appears sound and would remain so upon implementation of the Decision.

Viability for other sensitive and management indicator species (e.g. wolverine, elk and mule deer, hairy woodpeckers, Townsend's big-eared bats, boreal toads, and wolves) also appears sound although critical thresholds have not been identified. The size of the proposed project area is much smaller than an average wolverine home range. Elk and mule deer habitat is abundant and well-distributed across the Forest and viability is largely determined through hunting quotas, which are outside the scope of this project. Hairy woodpeckers use similar habitats as black-backed woodpeckers as well as unburned forests. Given the widespread availability of forage habitat, i.e., acres infested with mountain pine beetle and subsequent increases in nesting habitat associated with insect-related tree mortality, abundant habitat exists Forestwide for hairy woodpeckers. Project impacts on these species are also minimal or non-existent.

See the *Wildlife Resource Report and Biological Evaluation* for a more in-depth discussion on the species that may occur in the project area.

Hairy woodpeckers inhabit a wide variety of environments with dead, dying, or other insect prone trees. Given the widespread availability of foraging and nesting substrate generated by the mountain pine beetle outbreak, habitat for hairy woodpeckers will be overly abundant across the Forest for several years.

See also the 'Stonewall Viability Analysis *Updated for Decision'* in the project record.

Sensitive Plants

Direct and Indirect Effects

There are no known or suspected populations of threatened or endangered species of plants on the Helena National Forest. The Helena National Forest has known or suspected occurrences of 21 species of sensitive plants, including whitebark pine (Pinus albicaulis) which was designated as a sensitive species

by the Regional Forester in 2011. Besides whitebark pine there are no known occurrences of any other sensitive species in the project area. Eight sensitive plant species have possible habitat in the project area including roundleaf orchid (Amerorchis rotundifolia), scalloped moonwort (Botrychium crenulatum), peculiar moonwort (Botrychium paradoxum), lesser yellow lady's slipper (Cypripedium parviflorum), sparrow egg lady's slipper (Cypripedium passerinum), Howell's gumweed (Grindelia howellii), Hall's rush (Juncus hallii), and Missoula phlox (Phlox kelseyi var. missoulensis).

Because no herbaceous sensitive species are known to occur in the proposed treatment areas, direct effects to the herbaceous sensitive species are not expected. Project design features, intended to minimize or avoid potential adverse effects should a sensitive plant species be found in the treatment areas, have been incorporated into the decision (appendix B). These design features will not prohibit the attainment of project objectives. The effects of the decision are the same or less than those described for alternatives 2 and 3. The Effects Common to All Alternatives section and appendix B of the Botany Report and Biological Evaluation also apply to the decision.

The following determinations apply to the Stonewall Vegetation Project decision. This document serves as the Biological Evaluation for the decision, a combination of alternatives 2 and 3.

Roundleaf orchid (Amerorchis rotundifolia)

Direct, Indirect, and Cumulative Effects of Proposed Actions

This species is known from the Rocky Mountain Front and the northwest corner of Montana. Field surveys of potential wetlands within the analysis area did not locate any populations of this species. No other past surveys have located this species on the Helena National Forest. The habitat for this species is spruce forests along moist seeps and springs. Project design features will protect wetlands, seeps, and springs from ground disturbance; therefore, direct effects to roundleaf orchid are not expected. However, when suitable habitat is present for a species it is possible that unknown individuals may be present. As a result, there is a remote chance that individual roundleaf orchid plants could be directly affected if present. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section for alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Scalloped moonwort (*Botrychium crenulatum*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

This species is known from the Beaverhead-Deerlodge National Forest, immediately adjacent to the Helena National Forest. After numerous surveys, scalloped moonwort has not been found in the project area. This species is associated with wetland habitats. Project design features will protect wetlands, seeps, and springs from ground disturbance; therefore, direct effects to scalloped moonwort are not expected. However, when suitable habitat is present for a species it is possible that unknown individuals may be present. As a result, there is a remote chance that individual scalloped moonwort plants could be directly affected if present. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Peculiar moonwort (*Botrychium paradoxum*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

Peculiar moonwort is known from two populations in the Divide landscape area on the Helena National Forest. The habitat for this species on the Forest is open grassland and sagebrush. This habitat does not occur in treatment areas, and no populations are known to occur in the project area. Because treatments are not proposed in potential peculiar moonwort habitat and there are no known occurrences of this species in the project area, no direct effects are expected. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Lesser yellow lady's slipper (*Cypripedium parviflorum*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

Montana Natural Heritage Program has records showing an occurrence of this species just inside the Helena National Forest boundary and another just outside the boundary. Neither population has been seen recently. Field surveys in 2009 of potential wetlands did not locate any lesser yellow lady's slipper populations. No other past surveys have located this species on the Forest. No populations are known to occur in the analysis area. The habitat for this species is fens, damp mossy woods, seepage areas, and moist forest-meadow ecotone, in the valley and lower montane zones. Project design features will protect wetlands, seeps, and springs from ground disturbance; therefore, direct effects to lesser yellow lady's slipper are not expected. However, when suitable habitat is present for a species it is possible that unknown individuals may be present. As a result, there is a remote chance that individual plants could be directly affected if present. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Sparrow egg lady's slipper (*Cypripedium passerinum*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

Sparrow egg lady's slipper has not been found on the Helena National Forest, but is known from Glacier National Park and northwest Montana. Field surveys in 2009 of potential wetlands did not locate any populations of this species. No other past surveys have located this species on the Forest. No populations

are known to occur in the analysis area. The habitat for this species is mossy, moist, or seepy places in coniferous forests. Project design features would protect wetlands, seeps, and springs from ground disturbance; therefore, direct effects to sparrow egg lady's slipper are not expected. However, when suitable habitat is present for a species it is possible that unknown individuals may be present. As a result, there is a remote chance that individual plants could be directly affected if present. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Howell's gumweed (*Grindelia howellii*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

To date this species has not been found in the Helena National Forest. It is known from open roadsides in the western Blackfoot area. The Montana Natural Heritage Program was contracted by the Forest Service to survey known noxious weed populations across the Forest. They specifically searched for this species. It was not found during those surveys or in 2009 field surveys. Habitat is described as vernally moist, lightly disturbed soils adjacent to ponds and marshes, as well as roadsides and other disturbed areas. It is unlikely that this species would occur in heavily forested areas where management activities are proposed. Therefore, direct effects are not expected. Indirect effects would be as described under Effects Common to All Alternatives. See Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Hall's rush (*Juncus hallii*)

Direct, Indirect, and Cumulative Effects of Proposed Actions

This species has 15 populations across the Helena National Forest. The Montana Natural Heritage database identifies eight populations on the Forest. Three of these populations were relocated by Helena National Forest crews. Seven new populations were found by survey crews in 2009. Habitat is wet to moist meadows. Because no treatments are proposed in potential habitat and there are no known occurrences of Hall's rush in the project area, no direct effects are expected. However, when suitable habitat is present for a species it is possible that unknown individuals may be present. As a result, there is a remote chance that individual plants could be directly affected if present. Indirect effects would be as described under Effects Common to All Alternatives. See the Cumulative Effects section for alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Missoula phlox (Phlox kelseyi var. missoulensis)

Direct, Indirect, and Cumulative Effects of Proposed Actions

This species is located in each of the four landscape areas of the Helena National Forest. The Montana Natural Heritage database identifies eight populations on the Forest. The habitat for this species is open, exposed limestone-derived slopes in the foothills, to exposed ridges in the subalpine zone. Because no treatments are proposed in potential habitat and there are no known occurrences of this species in the project area, no direct effects are expected. Indirect effects would be as described under Effects Common to All Alternatives. See the Cumulative Effects section under alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability*** because the species is not known to occur within the project area and project design features will minimize or avoid potential adverse impacts to unknown plants that may occur in treatment areas.

Whitebark pine (Pinus albicaulis)

Direct, Indirect, and Cumulative Effects of Proposed Actions

This species is a hardy conifer that tolerates poor soils, steep slopes, and windy exposures and is found at alpine tree line and subalpine elevations throughout its range (USDI Fish and Wildlife Service 2011a). It is known to occur in almost all major mountain ranges of western and central Montana. In the project area it is known to be a minor component in several of the treatment units. The Stonewall Silviculture Report contains additional information regarding this species. That information is incorporated by reference.

This species is known to occur as a minor component in treatment units 79, 82, 83 and 88 (about 2,434 acres) which are proposed for prescribed fire. The decision will treat 123 acres fewer acres in whitebark pine habitat compared to alternative 2. Whitebark pine may also occur as scattered individuals in other treatment units. Whitebark pine occurrences will be promoted through implementation of project design feature SILV-2 which is designed to protect whitebark pine individuals and enhance habitat for the species. Thus, while there is the potential for individuals to be charred or physically damaged during the treatment, beneficial effects in the form of habitat enhancement due to the removal of shade-tolerant species and creation of caching sites for Clark's nutcrackers are expected in the long term. Indirect effects are as described under Effects Common to All Alternatives.

The Stonewall Silviculture Report states that whitebark pine would increase in the short term with the increase extending into the long term under alternative 2. This effect will also occur under this decision. The decision is consistent with recommendations for whitebark pine restoration (see Whitebark Pine Restoration appendix of the Stonewall Silviculture Report). See Cumulative Effects section for alternative 1 and appendix B of the Botany Report for specific cumulative effects.

Determination

The Decision ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability***. Project design feature SILV-2 will protect whitebark pine while incorporating activities to enhance the species' habitat. While some individuals may be impacted by these activities, an overall beneficial effect is expected in the long term.

Irreversible/Irretrievable Commitments

There are no irreversible or irretrievable commitments that will affect sensitive plants under the selected alternative (combination of alternative 2 and 3) when project design features are applied.

Cumulative Effects

The cumulative actions and resulting cumulative effects as discussed under alternative 1 also apply to this alternative. Additional information is available in appendix B of the Botany Report and Biological Evaluation. There will be no cumulative effects for the decision as no known herbaceous plant populations will be affected and there is a project design feature in place to protect whitebark pine. See also the discussion of cumulative effects due to indirect effects under alternative 1.

Conclusions

The Decision will have a beneficial effect to whitebark pine and a similar effect on other sensitive plant species as those described for alternatives 2 and 3. Other than whitebark pine, no other sensitive plant species are known to occur in the treatment areas. Through implementation of the project design features, potential detrimental effects to sensitive plants will be minimized or avoided. For whitebark pine and the eight sensitive plant species that could potentially occur in the project area, the determination is that the selected alternative ***may impact individuals but will not contribute toward a trend for federal listing or loss of viability***.

Forest Plan Consistency

Whitebark pine if the only sensitive plant species that has been found to date in the project area. The decision, a combination of alternatives 2 and 3, is consistent with Regional direction, Forest Plan Standards and Guidelines, and the Endangered Species Act. Surveys are currently occurring or have been completed for past, present, and reasonably foreseeable actions. Treatments are designed to promote whitebark pine. If any other species are found, they will be protected from ground disturbance or herbicide application as appropriate. As directed by the Forest Plan, if any of the species of special concern are verified in treatment areas, appropriate measures will be taken.

Soils

Direct and Indirect Effects

A summary list of landtypes and acres treated by vegetation treatment activities in the Decision can be found in Table 40. More detailed information disclosing the specific landtypes treated within each proposed vegetation treatment unit can be found in a spreadsheet in the project record. It should be noted that two units within the project boundary were affected by the Klondike and Sucker Creek wildfires during August and September of 2015. Unit 88 had approximately 350 acres within the burn perimeter of the Klondike fire. Of the 350 acres, 78 percent was either unburned or burned with low severity; the remaining 20 percent and 2 percent were moderate and severe burn severity, respectively. Unit 79 had approximately 29 acres with the burn perimeter of the Sucker Creek Fire. Of the 29 acres, 86 percent was either unburned or burned with low severity; the remaining 14 percent was burned with moderate severity. Both of these units were to be logged by hand, and then treated with a mixed severity burn. Given the mostly unburned or low severity of the fires in both units, and the lack of any existing detrimental soil disturbance within the units, the proposed vegetation and fuels treatments for units 88 and 79 in regards to soils, no measurable direct or indirect effects are expected from the project activities.

Table 40: Landtypes and acres treated by proposed vegetation treatments in the Decision.

Landtypes	Non-Winter Cable Yarding	Winter Cable Yarding	Hand Thin	Helicopter Yarding	Non-Winter Tractor Yarding	Winter Tractor Yarding	Total
12A			129		793		921
13A	3		238		236		477
49-	237		1,192		179		1,608
49A			11				11
49B	181		1,119		178		1,478
59-			253				253
59A			124				124
69-			60				60
79-			119				119
790			164				164
791			50				50
80-			236				236
87-			490				490
90-			449		9		458
Total	**421**		**4,634**		**1,395**		**6,449**

New Construction of Permanent or Long-term Specified Roads and Temporary or Short-term Specified Roads

As discussed in the soils specialist report section describing soil effects common to all action alternatives, 0.9 miles of temporary and short-term specified road construction would have short-term impact on approximately 2.7 acres of soil. For the purposes of this analysis, soil effects from temporary and short-term specified roads will be included with the area of detrimental soil disturbance associated with tractor and skyline cable yarding units, because the temporary and short-term specified roads will be constructed for ground-based logging equipment to access these units. However, reclamation of temporary and short-term specified roads upon conclusion of proposed vegetation treatments will facilitate long-term recovery of soil productivity on these 2.7 acres. Recovery of soils to pre-disturbance levels will likely take 50 years or longer.

Soil Disturbance Treatment Scenarios

Detrimental soil disturbance has been estimated for all activities in treatment units under the Decision. All decision treatment units are estimated to meet Region 1 soil quality standards as proposed when implemented with prescribed best management practices and design features. A spreadsheet showing the estimated detrimental soil disturbance for each treatment unit under the Decision can be found in the project record associated with the soils report submitted in support of the decision.

Soil disturbance in units 1a, 4, 5, 9, 10, 11, 12b, 13b, 17b, 19, 20, 21, 28, 40, 42, 43, 45, 46, 47, 49 and 74 will be evaluated following harvest activities to determine if burning after harvest, as proposed, can be

implemented and remain within Region 1 soil quality standards. If it is determined that burning will exceed soil quality standards, then burn prescriptions will be adjusted so activities remain within standards. If burning prescriptions cannot be changed, then burning will be delayed until adequate soil recovery has occurred and soil quality standards are met.

Irreversible/Irretrievable Commitments

An irreversible commitment represents a total loss of a resource, which cannot be replaced. An irretrievable commitment represents a temporary loss of a resource, which can be replaced over time. Detrimental soil disturbance associated with the Stonewall Vegetation Project will be an irretrievable commitment of soil resources. Soils will recover over the long-term following detrimental disturbance from proposed vegetation management actions from this decision. The decrease in soil productivity during this recovery time will represent the irretrievable impact of implementing vegetation treatment activities with Stonewall Vegetation Project. There are no known irreversible commitments under the alternatives 2, 3, or the Decision.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed under alternative 2 and 3 of the final environmental impact statement.

Conclusions

By including all design features and best management practices in the record of decision, the Decision for the Stonewall Vegetation Project will comply with the Helena National Forest Plan and Region 1 soil quality standards and National Forest Management Act requirements to limit detrimental soil disturbance, minimize cumulative effects and preserve soil productivity for future vegetative growth and soil health.

Under the Decision the following units may require deferred burning as described in appendix B, the design features of this record of decision: 1, 4, 5, 9, 10, 11, 12b, 13b, 17b, 19, 20, 21, 28, 40, 42, 43, 45, 46, 47, 49 and 74.

Nonetheless, detrimental soil disturbance will occur in the short-term, within the 15 percent of the activity area limits as defined by Region 1 soil quality standards. There will be a maximum of 417 acres of detrimental soil disturbance under the Decision (detailed table describing this is found in the project record in the soils analysis supporting the decision). Areas affected by detrimental soil disturbance will include main skid trails, log landings and temporary and short-term specified roads for tractor harvest units, cable yarding corridors and temporary and short-term specified roads for cable harvest units, and areas of severe burning in units treated with prescribed fire.

This detrimental soil disturbance will be a short-term impact because there will be a long-term trend for soil recovery through reclamation measures and/or natural recovery processes (i.e. frost heave bio-perturbation, biomass input and nutrient cycling, etc.). Soils will likely take at least 50 years for recovery to pre-disturbance conditions where reclamation measures are implemented, such as on temporary and short-term specified roads and log landings. Soils will likely take longer to recover to pre-disturbance conditions, perhaps at least 100 years, where only natural recovery processes will occur such as on main skid trails and cable yarding corridors.

Hydrology

Direct and Indirect Effects

The following analysis is an assessment of the Stonewall Record of Decision and alternatives 2 and 3 of the Stonewall Vegetation Project final environmental impact statement. The Decision is a blend of alternative 2 and 3. As a result of the direct and indirect effects of the decision fall between the range of effects analyzed in the final environmental impact statement. Specifically, treatment units analyzed from alternatives 2 and 3 were combined and other units were dropped in the Decision. Total numbers of acres proposed under the Decision are less than those analyzed in alternative 2 or 3. Subsequently, estimated water yield and sediment delivery from treatment units and roads have changed.

Analysis of erosion rates in the final environmental impact statement (Soils Report) estimates that none of the units analyzed exceed soil quality standards. Based on the proposed treatment acres, probable sediment delivery from units in the first year following implementation will be less than analyzed for alternative 2 and 3. Sediment delivery from burn treatment acres proposed in the Decision will also be less than analyzed in the final environmental impact statement. The total reduction in average annual sediment transport from using best management practices for project haul routes was modeled to be two tons of sediment less than the existing conditions under alternative 2 and 3. The total reduction in average annual sediment transport from best management practice implementation for the Decision haul roads will be less than the projected reductions for alternative 2 and 3 as fewer miles of haul roads will be utilized (12.3 miles less).

Estimated water yield increases from alternative 2 and 3 were projected to be insignificant based on the analysis. Fewer treatment acres are proposed in the Decision and therefore water yield is estimated to be lower than alternative 2 or 3 (Table 41).

These estimated changes do not substantively change the effects analysis as described in the hydrology report for the Stonewall Vegetation Project final environmental impact statement. Two units within the project boundary were affected by the Klondike and Sucker Creek wildfires during August and September of 2015. Both of these units were to be logged by hand, and then treated with a mixed severity burn. Given the mostly unburned or low severity of the fires in both units, and the lack of any existing water yield within the units, the proposed vegetation and fuels treatments for units 88 and 79 in regards to hydrology, no measurable direct or indirect effects are expected from the project activities.

Table 41: Estimated cumulative water yield increase under the Decision.

6th-HUC drainage	Percent Water Yield Alternative 2 and Alternative 3	Percent water yield Decision
Total	2.13 and 1.75	1.7

Additionally, this documents new information on Department of Natural Resources and Conservation timber sales that have occurred within the project watersheds since the original analysis was completed. The project-related and cumulative equivalent clear-cut areas, and estimated percent water yield increase that would result from work proposed under these alternatives as well as the addition of the acres of Department of Natural Resources and Conservation timber sales in the below project watersheds. The analysis is based on the assumption that all of the treated acres within the Department of Natural Resources and Conservation sale would result in a clearcut condition.

Table 42: Equivalent clearcut area for alternatives 2 and 3

HUC 6 Watershed	Existing	Alt 2	Alt 3	State Timber Sale
Lincoln Creek				
Percent of Drainage Harvested:	16	42	32	0
Percent of Past Harvest Recovered:	31	12	16	0
Percent of Drainage as ECA:	7	14	11	3
Beaver Creek				
Percent of Drainage Harvested:	15	29	25	0
Percent of Past Harvest Recovered:	19	10	11	0
Percent of Drainage as ECA:	4	5	5	1
Keep Cool Creek				
Percent of Drainage Harvested:	13	20	18	0
Percent of Past Harvest Recovered:	28	18	21	0
Percent of Drainage as ECA:	3	4	3	3

In areas such as the Stonewall project area, 20 to 30 percent of a watershed must be treated in order to *begin* to realize a statistically significant measureable increase in streamflow (MacDonald and Stednick 2003). Furthermore, in drier mountains such as the analysis area, research has suggested that remaining trees tend to make use of additional water made available through the reduction in transpiration brought about by tree removal (MacDonald and Stednick 2003), reducing the likelihood that predicted yield increases would be detectable in any of the study basins. Therefore, the additional State treatment combined with the Decision, would be below the 20 percent threshold resulting in non-measurable and nondeductible increase in water yield.

Irreversible/Irretrievable Commitments

The irreversible and irretrievable commitments of this decision are the same as those analyzed under alternative 2 and 3 of the final environmental impact statement.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed under alternative 2 or 3 of the final environmental impact statement.

Conclusions

Based on a review of the treatments proposed in the Decision and the treatments analyzed within the final environmental impact statement analysis, the Decision will have an equivalent or slightly reduced watershed effect then alternative 2 or 3. Road constructed and their subsequent obliteration will be less than alterative 2 and only slightly higher (0.5 miles) than alternative 3. Because there are fewer acres treated, sediment delivery from treatment units is estimated to be less than alternatives 2 or 3. The Decision will reduce the number of miles of roads used for haul routes and therefore reduce the amount of benefits from the application of best management practices. Through design features and mitigation measures identified in this decision in appendix B, the proposed work on haul routes under the Decision will most likely reduce short-term sediment delivery to stream channels, improving water quality in the watersheds. Water yield change due to proposed project activities is estimated to be less than alternatives 2 or 3 and predicted to be below the margins of detectability. Water yield is not anticipated to have any

deleterious effects on channel stability or water quality. Thus, the Decision, will meet Forest Plan standards as well as applicable state and federal laws.

Fisheries

Direct and Indirect Effects

The following analysis is for the activities found within the Stonewall Decision. When looking at the Decision, in comparison to alternatives 2 and 3, there have been quantitative changes in most of the specific treatment types within the following general categories: harvest treatment, fuels treatment, and roads. For both harvest and fuels treatment (e.g., prescribed fire), total acreage for the Decision is very close to alternative 3, which proposed approximately 25 percent fewer acres than alternative 2.

Therefore, realized effects (e.g., sediment mobilization) to fisheries resources from the Decision (harvest and fuels) will be essentially identical to alternative 3, and slightly less than alternative 2. Furthermore, the fisheries analysis estimated that the majority of potential project effects, the primary of which is fine sediment increase, will originate from roads rather than harvest or fuels treatment.

In this decision, roads (31.5 miles) used for haul will be measurably less as compared to both alternative 2 (45.6 miles) and alternative 3 (43.8 miles). The overall effect on fisheries as a result of these changes is a potential small increase in long-term sediment from roads due to an assumed reduction in road maintenance on approximately 12 to16 miles of roads as compared to alternatives 2 and 3.

Temporary road construction for the Decision is 0.9 mile, as compared to 2.6 and 0.4 miles for alternatives 2 and 3, respectively. Therefore, the Decision could produce less short-term sediment input than alternative 2, and slightly more than alternative 3. For this Decision, the temporary roads will be obliterated after use, which should restrict any sediment input to the short-term timeframe (few years).

In summary, the differences between the Decision and alternatives 2 and 3 are probably not of a magnitude sufficient to produce substantial change to aquatic organisms or their habitat. Any small sediment changes will likely be restricted to site-specific stream reaches, and not capable of observably affecting aquatic resources.

Irreversible/Irretrievable Commitments

The irreversible and irretrievable commitments of this decision are the same as those analyzed under alternatives 2 and 3 of the final environmental impact statement.

Cumulative Effects

The short-term sum total of effects from the Decision combined with other actions will be slightly less than the sum for alternative 2, and nearly identical to those for alternative 3 due to difference in the quantity of temporary roads. The long-term sum of effects from the Decision and other actions could be slightly higher than both alternatives 2 and 3 due to the reduced quantity of road maintenance; however, differences are unlikely to be of a magnitude sufficient to observably affect aquatic organisms.

Conclusions

By incorporating all design features and mitigation measures identified in appendix B, this decision complies with Forest Plan Standards for fisheries resources by limiting short-term effects, and maintaining or improving aquatic habitat for aquatic-dependent species in the long-term.

Noxious Weeds

Direct and Indirect Effects

The direct and indirect effects described in Effects Common to All Alternatives and Effects Common to All Action Alternatives sections of the Noxious Weeds Specialist Report applies to this decision. The Stonewall decision will have impacts similar to those described for alternatives 2 and 3.

The Decision

The acres of existing weed infestations within treatment areas identified in the decision are very similar to those analyzed under alternative 2 and slightly higher than those analyzed for alternative 3. Of the total weeds mapped within the project boundary approximately 349 acres are within the treatment units of the Stonewall decision, as shown in the following table.

Table 43: Acres of noxious weed infestations in the proposed treatment units by proposed activity.

Proposed Activity	Unit	Dominant Weed Species	Currently Infested Acres
Tractor harvest	46, 47, 48, 49, 51, 75	Butter and eggs	48
	46, 47, 48, 49, 51, 75	Canada thistle	48
	46, 47, 48, 49, 51, 75	Common mullein	48
	42	Saint Johns' wort	6
	1, 3 ,4, 5, 9, 13b, 46, 47, 75	Houndstongue	49
	1, 3, 4, 5, 9, 12b, 13b, 17b, 18, 19, 20, 21, 28, 38, 46, 47, 48, 51, 59, 62, 63, 74, 75	Spotted knapweed	211
Total acres in tractor harvest units*			**232**
Skyline harvest	7, 8	Houndstongue	5
	7, 8, 22, 23, 24, 25, 34, 35, 36, 52, 53	Spotted knapweed	32
Total acres in skyline harvest units*			**32**
Hand treat and/or prescribed fire	50, 57,58, 79, 84, 85	Butter and eggs	15
	50, 84, 85	Canada thistle	4
	50. 57, 58, 79, 84, 85	Common mullein	19
	11, 12a, 13a, 17a, 73, 84	Houndstongue	13
	11, 12a, 13a, 14, 16, 17a, 50, 57, 58, 60, 67, 68, 69, 70, 71, 73, 78, 79, 80a, 82, 84, 85	Spotted knapweed	74
Total acres in hand treat/prescribed fire units*			**85**
Total acres of weed infestation within proposed treatment units*			**349**

**Total acres does not equal the sum of all acres infested by a particular species. When a polygon is mapped and it contains multiple species, acres are recorded for each species.*

As discussed in the final environmental impact statement, the risk of infestation for each treatment activity varies with the amount of ground disturbance expected. Table 44 shows the activities identified in the decision and the estimated acres of potential weed infestation associated with those activities. There is an estimated 326 acres of potential weed infestation from the Stonewall decision, which is fewer acres than estimated for alternative 2 (427 acres) but more than estimated for alternative 3 (307 acres).

Table 44: Estimated acres of potential weed infestation by proposed activity - Stonewall decision

Proposed Activity	Risk of Infestation	Potential Acres of Activity*	Estimated Acres of Weed Infestation
Tractor harvest	Moderate	1,559	1,559 x 0.10 = 156
Tractor harvest log landings	High	35	35 x 0.50 = 18
Acres of haul road (35-ft buffer)	Low	275	275 x 0.03 = 8
Skyline harvest	Low	421	421 x 0.03 = 13
Skyline harvest log landings	High	10	10 x 0.5 = 5
Roads built then obliterated immediately following timber removal **	High	(3.8 acres/mile x 0.9 miles) = 3	3 x 0.50 = 1.5
Prescribed fire or hand thin/pile	Low	4,177	4,177 x 0.03 = 125
Total acres of potential weed infestation			**326**

**This column represents total acres. None of the listed activities are expected to cause infestations on all of the acres affected, but all acres affected would be monitored and spot treated with herbicides.*
***Infestation associated with road construction or road decommissioning is 3.8 acres per mile based on a 25 foot width.*

Within the decision area, 349 acres are currently infested with noxious weeds. When combined with the projected 326 acres of infestation due to treatments, the potential infestation is about 675 acres. This acreage is similar to those disclosed in the final environmental impact statement for alternatives 2 and 3. It is slightly larger than calculated for alternative 3 and slightly smaller than calculated for alternative 2. The costs associated with treating the weeds under this decision will be very similar to those discussed in the final environmental impact statement for alternatives 2 and 3.

Irreversible/Irretrievable Commitments

The irreversible and irretrievable commitments of the decision are the same as those analyzed under alternatives 2 and 3 of the final environmental impact statement.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed under alternatives 2 and 3 of the final environmental impact statement.

Conclusions

The effects of the decision will be for slightly fewer acres of weed infestation than those described under alternative 2 and slightly more acres than described for alternative 3. The costs associated with treating the weeds under this decision will be very similar to those discussed in the final environmental impact statement for alternatives 2 and 3.

Recreation

Direct and Indirect Effects

The effects of the Decision are similar to those described under alternative 2 of the final environmental impact statement, all units that were identified with potential impacts to recreation resources in alternative 2 are included in the Decision. The only exception is that under the Decision unit 57 changed from Group

3 Regeneration Harvest to Group 6 Prescribed Fire, which will likely reduce potential impacts to recreation because no harvest equipment will be required and treatment will be implemented by hand. This treatment remains consistent with analysis that considered using fire following the harvesting activity that was proposed in alternative 2.

Irreversible/Irretrievable Commitments

There are no irreversible or irretrievable commitments for Recreation under this decision.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed and described in the “Cumulative Effects Common to All Action Alternatives” section of the final environmental impact statement Recreation analysis.

Conclusions

Implementing the Decision will have short-term direct affects to recreation resources during project implementation such as limited access to specific areas and increased presence of people and noise within the project area. Project design features are in place to limit potential affects. The proposed treatments will address the purpose and need for the Stonewall Vegetation Project, resulting in a more diverse, resilient and sustainable Forest ecosystem with reduction in risk of negative impacts from severe wildfire. The long-term indirect effects to recreation will be generally beneficial and help to maintain the existing recreation settings and scenic qualities within the project area.

The Decision is consistent with forestwide and management area standards for recreation.

Inventoried Roadless Areas

Direct and Indirect Effects

The direct and indirect effects of the Decision on Inventoried Roadless Areas and unroaded lands contiguous to the inventoried roadless areas from prescribed fire treatments are the same as those described in alternative 3 of the final environmental impact statement, with the exception of unit 80 which remains as analyzed in alternative 2. The following table shows the specific proposed actions associated with the Decision. Portions of two inventoried roadless areas (Bear-Marshall-Scapegoat-Swan and Lincoln Gulch Inventoried Roadless Areas) occur within the Stonewall Vegetation Management Project area. However, treatments are only planned under this decision in the Bear-Marshall-Scapegoat-Swan inventoried roadless areas.

Table 45: Logging Type, Treatment Type, and Prescription in Roadless Areas.

Group	Unit	Logging System	Treatment Type	Prescription	Acres
6	85	Hand	Prescribed Fire	Low Severity Fire, Openings less than 5 acres	143
7	80	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 20 acres	326
7	87	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 5acres	36
8	79	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	337
8	82	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 75 acres	776
8	83	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 75 acres	457
8	84	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	831
8	88	Hand	Prescribed Fire	Mixed Severity Fire, Openings less than 30 acres	892

Irreversible/Irretrievable Commitments

There are no irreversible and irretrievable commitments of resources for roadless resources under this decision.

Cumulative Effects

The cumulative effects of this decision are the same as those analyzed under the action alternatives of the final environmental impact statement.

Conclusions

The Decision includes the same prescribed fire treatment units within the Bear-Marshall-Scapegoat-Swan inventoried roadless areas and unroaded areas contiguous to the inventoried roadless area that were analyzed in alternative 3 of the final environmental impact statement. The Decision proposes no treatment within the Lincoln Gulch inventoried roadless area. The effects from the decision on roadless and unroaded areas fall within the range of effects identified in the final environmental impact statement.

Scenery/Visuals

Direct and Indirect Effects

The direct and indirect effects of this decision for scenery and visuals are similar to those described under the “Environmental Consequences” scenery section of the final environmental impact statement and analyzed under alternatives 2 and 3 of the final environmental impact statement. The activities selected were part of these alternatives and those activities selected are most similar to alternative 3. The Decision will treat slightly fewer acres overall as well as fewer acres of regeneration harvest overall. Fewer acres of treatment are anticipated to be viewed in foreground and middle-ground viewing distances by the Decision. About 0.9 miles of temporary road will be built for project use then obliterated. This is less than alterative 2 and more than alternative 3.

The Decision will also treat some units with hand treatment (chain saws) rather than ground based removal systems, changing the effects in these units, viewed in the foreground, to those described for hand removal in the Scenery/Visuals specialist report. The changes in treatment prescriptions and road miles under the Decision will have little impact to the overall effects for Scenery/Visuals as described in the final environmental impact statement and all proposed actions will meet Forest Plan standards and Visual Quality Objectives established for this area.

Irreversible/Irretrievable Commitments

There will be no irreversible or irretrievable commitments of the visual resource/scenery as a result of the Decision.

Cumulative Effects

The cumulative effects of the visual resource/scenery for the Decision are the same as those described for scenery under the "Environmental Consequences" scenery section in the final environmental impact statement and in the Scenery/Visuals specialist report.

Conclusions

The visual quality/scenery of the Stonewall project area will be affected by actions included in the Decision. These effects will vary in duration and intensity depending upon where on the landscape the activities take place. Activities will be visible from main roads, trails, and sensitive viewing areas within the project area boundary. As described in the "Environmental Consequences" scenery section in the final environmental impact statement, activities for the Project, when implemented with project design features and mitigation measures found in appendix B, will be in compliance with the Visual Quality Objectives allocated in the Forest Plan for the Helena National Forest. The visual effects of the Decision activities will meet Forest Plan standards and Visual Quality Objectives established for this area.

Cultural Resources

Direct and Indirect Effects

The Stonewall Vegetation project will have no adverse effect on cultural resources as currently designed and with the mitigation measures found in appendix B of this decision. For purpose of this National Environmental Policy Act analysis, an existing data review and intensive survey of 2,493 acres within treatment units in 2014 and 2015 identified 26 cultural resources. An additional 3,955 acres received review ranging from sample field investigation, background research, and oral history interviews. A total of 15 significant or unevaluated cultural resources occur within areas of potential effect, therefore resource protection measures have been consulted on with the State Historic Preservation Office and the Tribal Historic Preservation Office and will be applied during project implementation, resulting in a No Adverse Effect finding for cultural resources.

To comply with the National Historic Preservation Act of 1966, cultural resource survey where completed within previously un-surveyed treatment units or portions thereof in 2014 and 2015. Surveys where done in accordance with the East Side Forests Site Identification Strategy focusing on high, medium and low probability areas for site potential and 36 CFR 800.4(b)(1). Survey transects consisted of 10 to 20 meter wide pedestrian transects performed across the unit on a consistent azimuth that insured adequate coverage. Any identified cultural resources where recorded and researched to determine significance and protection measure requirements.

Recognizing the potential exists for unidentified sites to be encountered or disturbed during project activity, special provisions for their protection will be included in all contracts used to implement this

project. Mitigation practices required will include halting activities and notifying the Forest Archaeologist, if cultural resources are encountered during project implementation.

Irreversible/Irretrievable Commitments

The irreversible and irretrievable commitments of this decision are the same as those analyzed under alternatives 2, and 3 of the final environmental impact statement. Project related activities may increase public access and, as a consequence, enhance opportunities for artifact collecting and vandalism. Project related activities may inadvertently expose previously undiscovered prehistoric or historic sites. It is possible that the exposed artifacts and/or ruins will not be observed or reported to the Forest Service, thus providing opportunities for artifact collecting and vandalism. However, the results of past cultural resource monitoring suggests that these kinds of indirect effects will be negligible.

Cumulative Effects

The cumulative effects of this decision are similar to those analyzed under alternative 2, and 3 of the final environmental impact statement. The Decision would implement vegetation management activity in the project area. This will add to the cumulative effect of Forest Service management activities on cultural resources in the Stonewall project area since the turn of the century. The current population of identified cultural resources in this area of the Lincoln District is very high, whether for prehistoric American Indian camps or historic mining, homesteading and other ruins. The Stonewall vegetation project will contribute to the overall amount of ground-disturbance in the drainage caused by Forest Service activities, but it will not substantially add to the overall cumulative effect on the cultural resource base in this area, as it is presently understood.

Economics

Direct and Indirect Effects

The Decision, project feasibility and financial efficiency is displayed in Table 46:

Table 46: Project Feasibility and Financial Efficiency Summary

Category	Measure	Alternative 1	Alternative 2	Alternative 3	Decision
Timber Harvest Information	Acres Harvested	0	1,968	1,073	1,288
	Volume Harvested (CCF)	0	28,930	20,040	17,723
	Base Rates ($/CCF)	NA	$3.00	$3.00	$3.00
	Predicted High Bid ($/CCF)	NA	$22.16	$18.93	$38.97
	Potential Revenue ($)	$0	$641,000.00	$379,000.00	$691,000.00
Timber Harvest & All Other Planned Non-essential Activities	PNV ($)	$0	-$1,107,000.00	-$997,000.00	-$972,000.00

Table 47 displays the design criteria activities, their costs, and the potential available revenue need to pay for those activities. The available revenues estimates are the preliminary indicated advertised rate, the

starting point of the timber sale auction. This revenue estimate is a conservative value of the timber sale and the least amount that will be accepted by the Forest Service for the project.

Table 47: Activity Expenditures by Alternative over a Five-year Period

	Alternative 1	Alternative 2	Alternative 3	Decision
Available Revenues				
Preliminary Advertised Rate ($) X Estimated Volume	$0	$86,790.00	$60,120.00	$540,204.95
Adjustment for Potential Underrun (25 percent)	$0	$21,698.00	$15,030.00	$405,153.71
Potential Revenue Available for Activities	$0	$65,092.00	$45,090.00	$135,051.24
Activities not included in the Appraisal				
Weed Spraying- Not Connected with harvest/burning	$0	$31,600.00	$26,800.00	$31,600.00
Weed Spraying- Connected with harvest/burning	$0	$18,000.00	$16,100	$16,300.00
Burning activity fuel piles		$3,700.00	$9,400.00	$10,350.00
Regeneration Planting	$0	$493,272.00	$473,076.00	$410,652.00
Regen Exams	$0	$15,015.00	$3,870	$30,195.00
Pre-commercial Thinning	$0	$266,710.00	$294,276.00	$316,114.00
Piling and burning of non-activity fuels	$0	$27,875.00	$40,750.00	$17,940.00
Prescribed Fire in non-commercial areas	$0	$409,725.00	$272,100.00	$313,275.00

***All of the initial entry prescribed fire and maintenance burn acres in the action alternatives may be scheduled for maintenance burns every 6 to 10 years after initial treatments.*

Natural regeneration is planned but it was decided to allow for some planting costs in case it was necessary.

The analysis calculated the jobs and labor income associated with the harvesting and processing of the timber products and other project activities, such as weed spraying, non-commercial thinning, prescribed burning, slash disposal and erosion control. Timber products harvested from the proposed project and the forestry activities will have direct and indirect effects on local jobs and labor income. In order to estimate jobs and labor income associated with the timber harvest, we assumed that 65 percent of material for this Decision will be processed by the sawmill and planning sector, most of the remaining volume will be processed as pulp and paper, posts and poles and house logs. We developed expenditures for activities to estimate jobs and labor income associated the Decision.

Table 48 displays both direct and total estimates for employment (part and full-time) and labor income that may be attributed to the Decision. Since the expenditures occur over an eight-year period, the estimated impacts of jobs and labor income will be spread out over the life of the project. Most of the timber harvest and wood processing jobs will occur over the first two-three years of the project, and most of the economic impacts related to other activities will occur during the later stages of the project. It is important to note that these are not new jobs or income, but rather jobs and income that can be attributed to this project.

Table 48: Total Employment and Labor Income over the Life of the Project

Stonewall Vegetation Project Alternatives								
Non-timber Activities	**Alternative 2**		**Alternative 3**		**Decision**		**No Action**	
	Total	**Annual**	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Part and Full Time Jobs Contributed								
Direct	29	3	25	3	10	1	0	0
Indirect and Induced	8	1	7	1	3	0	0	0
Total	36	4	31	3	13	1	0	0
Labor Income Contributed ($M)								
Direct	855	95	737	82	434	43	0	0
Indirect and Induced	236	26	204	23	90	9	0	0
Total	1,091	121	941	105	524	52	0	0
Timber Harvest	**Alternative 2**		**Alternative 3**		**Decision**		**No Action**	
	Total	**Annual**	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Part and Full Time Jobs Contributed								
Direct	71	18	46	11	51	10	0	0
Indirect and Induced	63	16	41	10	28	6	0	0
Total	134	34	87	22	79	16	0	0
3								
Direct	3,445	861	2,237	559	2,117	423	0	0
Indirect and Induced	3,190	797	2,071	518	1,307	261	0	0
Total	6,635	1,659	4,308	1,077	3,424	685	0	0
All Activities	**Alternative 2**		**Alternative 3**		**Decision**		**No Action**	
	Total	**Annual**	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Part and Full Time Jobs Contributed								
Direct	100	21	71	14	61	11	0	0
Indirect and Induced	71	17	48	11	30	6	0	0
Total	717	38	118	25	91	17	0	0
Labor Income Contributed ($M)								
Direct	4,301	956	2,974	641	2,551	467	0	0
Indirect and Induced	3,425	824	2,275	540	1,398	270	0	0
Total	7,726	1,780	5,249	1,182	3,948	737	0	0

The Decision appears to be financially feasible given that predicted high bids are greater than the base rates. The Decision also has negative present net values when using predicted high bid multiplied by expected volumes. The difference between revenue available for project activities and present net value is largely explained by the use of stumpage rates instead of predicted high bids and the inclusion of sale

preparation and sale administration costs for the agency in the present net value for each alternative. The Decision (blended alternative) is adequately supported in the Economic analysis in the final environmental impact statement. To implement the Decision, additional funding may be needed depending on the sale revenue. If we see only the advertised rate for example, there may be some challenges acquiring funds needed for all the project activities. This analysis, as described, is consistent with the Helena National Forest Plan.

Conclusion

In summary, the interdisciplinary team considered the environmental effects of the wildfires, additional harvest on Montana Department of Natural Resource land and the selection of units from each of the action alternatives. This decision is bound by those effects disclosed for each resource described in chapter 3 of the final environmental impact statement which documents the interdisciplinary team analysis. This additional analysis serves to assure that this alternative will not have unanticipated effects beyond those which could reasonably be expected. All actions associated with this decision were considered in the various alternatives and are within the scope considered in the final environmental impact statement. Each specialist considered all aspects of this decision to assure that it is consistent with the Forest Plan, and all applicable laws, regulations and agency policy relevant to this project.

Appendix F: Forest Plan Consistency for the Decision

Forestwide Recreation Standards

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. New campgrounds and other developed recreation facilities, such as boat ramps or picnic areas, will generally not be constructed. Continue to maintain existing developed sites, but emphasize providing dispersed recreation opportunities. Removal of existing sites may be necessary, in some cases, due to site deterioration or excessive maintenance cost.	This standard is met. No new campgrounds or other developed recreation facilities are proposed with this project. The project area does not have any developed sites. Please refer to the Recreation Specialist Report for more information regarding recreation facilities/sites.
2. Encourage ski-touring trail development by locating and marking additional trails and by encouraging the private sector to develop trails.	Not applicable to the purpose and need for the project because no existing or proposed ski trails are located in the project area.
3. Complete a Recreation Opportunity Guide (ROG) for each Ranger District, to make recreation opportunities more visible to the public.	This standard is met. Recreation opportunity guides have already been developed for the Lincoln Ranger District. Developed Recreation opportunities are currently posted on the Forest website.
4. A specific Continental Divide National Scenic Trail (CDNST) route will not be identified prior to approval of the comprehensive plan being prepared by the Forest Service and the Secretary of Agriculture's Advisory Council. Once the comprehensive plan is approved, the management direction will be incorporated further in this plan. Based on the Comprehensive Plan, a more detailed analysis will be completed to show trail segments, objectives and specific route locations. The legislation authorizing the Continental Divide National Scenic Trail specifically intended that the trail would not adversely affect or preclude the application of normal management practices on lands adjacent to or within the trail corridor (both public and private). It is not the intent of the legislation that a separate "management plan" be developed for the Continental Divide National Scenic Trail, but to provide for the development and management of the trail as a management practice which is integrated into the overall prescription for the land through which the trail passes.	The Continental Divide National Scenic Trail will not be affected by this project.
5. Emphasize "Pack-In Pack-Out" use in dispersed recreation areas and in wilderness to reduce resource impacts and management costs.	This standard is met. This is done via Frontline, recreation Forest personnel and Forest website.
6. Provide information to users of remote areas and wilderness about potential conflicts with humans and bears and proper camping methods to avoid such conflicts.	This standard is met. This is done via Frontline, recreation Forest personnel and Forest website.
7. Outfitter and guide use will generally be maintained at a level determined from the highest two years of actual use experienced during the period l979 through l983. Application for additional or new use will be considered on a case-by-case basis, with consideration of resource limitations and public need.	Not applicable to the Stonewall Vegetation Project, because no outfitter and guide usage is proposed for consideration with this project.

Forestwide Visual Standards

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. A visual quality objective (VQO) is stated for each management area. These visual quality objectives provide the guidelines for altering the landscape. Portions of each management area may have a more or less restrictive visual quality objective. Appendix B lists roads, trails, campgrounds, etc., that are within sensitive viewing areas. The visual quality objective for these areas is noted in appendix B. The visual quality objectives for the Continental Divide National Scenic Trail will be the same as the management areas through which the trail passes.	This standard is met. The visual quality objective for management area T-1 generally allows for maximum modification. The visual quality objective for management areas T-2 and T-3 generally allows for modification. The visual quality objective for management area T-4 generally allows for retention and partial retention. The visual quality objective for management area W-1 generally allows for partial retention. Highway 200 is listed as Sensitivity Level 1 which calls for retention in the foreground, partial retention in the mid-ground, and modification in the background. The activities described for this decision will promote rehabilitation of the landscape improving natural visual characteristics in the long-term. Forestwide standards for Insects and Disease provide direction to use silvicultural systems to: (1) improve species diversity and growth, and vigor for stands, and (2) increase the size diversity and class diversity between stands.

	The management activities in this project are tools to rehabilitate the vegetative condition within the project area. Several large stands of dead trees will be removed, providing an opportunity to improve the species diversity, growth and vigor of the vegetation. The visual management system identifies rehabilitation as a short-term management alternative. "Landscape rehabilitation is used to restore landscapes containing undesirable visual impacts to a desired visual quality. It may not always be possible to immediately achieve the prescribed visual quality objective with rehabilitation, but is should provide a more visually desirable landscape in the interim" (USDA, 1974). The potential direct, indirect, and cumulative effects of these activities to visual resources will be consistent with Forest Plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objective to be achieved. In addition, this standard will be met by applying the visual design features for sensitive view sheds in or near the project area. (Design Features VIS-2, 3, 4, 5, 6, and 7 in appendix B, ROD). Refer to the Visuals/Scenery Specialist Report.

Forestwide Cultural Resources Standards

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. The Forest will undertake a systematic program of cultural resource inventory, evaluation, and preservation aimed at the enhancement and protection of significant cultural resource values, as prescribed for Federal Agencies by Section 106 of the National Historic Preservation Act and 36 CFR 800. Cultural resource sites evaluated as significant will be preserved in place whenever possible. When such resources are threatened by project development, an effort to avoid or minimize adverse impact by project redesign will be made. When avoidance is judged by the Forest Supervisor to be imprudent or infeasible, the values of the site will be conserved through proper scientific excavation, recordation, analysis, and reporting. An inventory survey for cultural resources will be made for all significant ground-disturbing activities. Forest inventory efforts will be focused in three areas including: a. Areas where specific project activities, such as timber sales, road developments, range improvements, or mineral development activities, result in significant ground disturbance. b. Large areas where substantial development impact is anticipated, such as oil- and gas-planning areas. c. Areas where formal archaeological surveys may provide management data that are broadly applicable to ecologically similar areas and which will facilitate the development of predictive models capable of addressing issues of cultural site density, distribution, and significance. The Forest will encourage scientific research by privately funded universities as a means of acquiring additional inventory and interpretive data. Such projects will be coordinated with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. Cultural resource site information is exempt from disclosure under the Freedom of Information Act. Following Forest Supervisor written approval, site locational data may be released on a need-to-know basis to consultants, universities, or museums. Discovered cultural resources will be evaluated in relation to published Advisory Council on Historic Preservation (ACHP) criteria for eligibility to the National Register of Historic Places. Cultural resource sites determined eligible will be nominated to the National Register. The Forest will coordinate cultural resource issues and concerns with the appropriate Native American groups to ensure that Forest management activities are not detrimental to the protection and preservation of Native American religious and cultural sites, treaty rights, and religious and cultural practices. The Forest will enhance and interpret significant cultural sites for the education and enjoyment of the public when such development will not degrade the cultural	This standard is met. Compliance inventory, evaluation of site significance and project effect, consultation with the Montana State Historic Preservation Office and Tribal Historic Preservation Officers, and implementation of design features for project-affected cultural resources will comply with the National Historic Preservation Act and its implementing regulations in 36 CFR 800, as well as Helena National Forest Plan (USDA 1986) Standards and guidelines. Therefore, the results of this project on cultural resources will remain within Forest Plan Standards because National Historic Preservation Act Section 106 has been completed prior to implementation and mitigation will be done to avoid adversely effecting cultural resources within the planning area.

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
property or conflict with other resource considerations. Known significant cultural resource sites on the Forest will be protected from inadvertent or intentional damage or destruction. Portions of the Lewis and Clark National Historic Trail are on the Helena Forest. Some interpretive signing has been placed along the trail. Normal management practices can still access land adjacent to or within the trail corridor, however, project activities will be conducted to minimize disturbance to the cultural site.	

Forestwide Wildlife and Fish Indicator Species Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Populations of wildlife "indicator species" will be monitored to measure the effect of management activities on representative wildlife habitats with the objective of ensuring that viable populations of existing native and desirable non-native plant and animal species are maintained. See chapter IV, part D Monitoring and Evaluation for specific monitoring requirements. Indicator species have been identified for those species groups whose habitat is most likely to be changed by Forest management activities. The mature tree dependent group indicator species is the marten; the old growth dependent group is represented by the pileated woodpecker and the goshawks; the snag dependent species group is represented by the hairy woodpecker; the threatened and endangered species include grizzly bear, gray wolf, bald eagle and peregrine falcon; commonly hunted indicator species are elk, mule deer and bighorn sheep; fish indicator species is the cutthroat trout.	This standard is met. Westslope cutthroat trout (WCT) are an indicator species. The Aquatic Species Report and Biological Evaluation for the Stonewall Vegetation Project analyzed and measured the potential effects of the project for this indicator species (Westslope cutthroat trout). Monitoring element C7 focuses on pileated woodpeckers, among other species. Pileated woodpeckers were chosen as a management indicator species because they were the largest primary excavator on the Helena National Forest. Pileated woodpeckers were also chosen as a management indicator species because they have the most restrictive requirements in terms of snag size of any cavity nester on the Forest. Forest Plan Standards applicable to pileated woodpeckers are those that provide thresholds for snags. Out-year monitoring would occur in the project as part of Forest Plan monitoring specific to element C7. Monitoring element C7 focuses on northern goshawks, among other species. The northern goshawk was chosen as a management indicator species for old growth due to the diverse prey base and nesting habitat commonly found in late-successional forests. Dispersion of late-successional habitat throughout the Forest was considered important for goshawks although recent science has shown that goshawks also make use of a wide variety of habitats so long as a diverse prey base is present along with mature trees for nesting. Out-year monitoring would occur in the project as part of Forest Plan monitoring specific to element C7. Monitoring element C7 focuses on hairy woodpeckers, among other species. Hairy woodpeckers have wide ecological amplitude in terms of nesting and foraging. Hairy woodpeckers are abundant across the Forest. Forest Plan Standards applicable to hairy woodpeckers are those that provide thresholds for snags. Out-year monitoring would occur in the project as part of Forest Plan monitoring specific to element C7. Monitoring element C8 focuses on martens. Martens were chosen as a management indicator species because they are associated with mesic mature and late-successional forests. Specifically, they require at least 25 percent canopy cover and generally avoid large openings. Consequently, they are sensitive to management actions. Furthermore, because they are predators they are good indicators of ecosystem health due to their position on the food chain. According to the Forest Plan environmental impact statement, appendix B (p. B/68), old growth requirements of the Forest Plan are intended to provide the minimum management requirements for several species including martens. Forest Plan Standards applicable to martens are those that provide thresholds for snags. Out-year monitoring would occur in the project as part of Forest Plan monitoring specific to element C8.

Forestwide Big Game Standards

<table>
<tr><th>Standard</th><th>If Standard applies, how is standard being met, and where in the project file is the documentation?</th></tr>
<tr><td>Big Game - 1. On important summer (see glossary) and winter range, adequate thermal and hiding cover will be maintained to support the habitat potential.</td><td>This standard is met. The analysis in the site-specific amendment concludes that elk population potential established in the Forest Plan would continue to be realized. When the Forest Plan Record of Decision was signed in 1986, the selected alternative was E-1. Alternative E-1 established Forestwide elk population potential for summer and winter range. In 1986, the Forest Plan summer range elk potential was 6,300 elk; the winter range elk potential was 4,000 elk. By decade five, summer range elk potential in the Forest Plan was projected at approximately 6,200 elk and winter range elk potential at 3,200 elk (Forest Plan Record of Decision page 13, Forest Plan final environmental impact statement pages II/56-60). Based on aerial survey data collected by Montana Fish, Wildlife and Parks staff in 2014, there are over 11,000 elk Forestwide within those hunting districts for which a majority overlaps with the Forest. This is well in excess of that estimated at the time the Forest Plan was crafted and also in excess of that predicted for decade five (6,400 elk).</td></tr>
<tr><td>2. An environmental analysis for project work will include a cover analysis. The cover analysis should be done on drainage or elk herd unit basis. (See Montana Cooperative Elk-Logging Study in appendix C of the Forest Plan for recommendations and research findings on how to maintain adequate cover during project work.)</td><td>Standard is met. The cover analysis is completed at the elk herd unit scale. There are two herd units that overlap the project area: the Beaver Creek and Keep Cool herd units. Elk herd units were developed with Montana Department of Fish, Wildlife, and Parks. Refer to the Wildlife Resource Report.</td></tr>
<tr><td>3. Subject to hydrologic and other resource constraints, elk summer range will be maintained at 35 percent or greater hiding cover and areas of winter range will be maintained at 25 percent or greater thermal cover in drainages or elk herd units.</td><td>Both the Beaver Creek and Keep Cool Creek herd units are currently below the thermal cover threshold at 5 percent and 3 percent thermal cover, respectively, on winter range. Under the Decision, thermal cover would drop to 3 percent in the Beaver Creek herd unit on winter range and it would remain at 3 percent in the Keep Cool herd unit, on winter range.

Big game Standard 3 (HFP, p. II/17) requires that hiding cover on elk summer range be maintained at or above 35 percent (or, in this case, 50 percent using the Montana Department of Fish, Wildlife, and Parks crown closure criterion). Hiding cover must be in blocks of at least 40 acres to be tallied as Forest Plan hiding cover. This decision will result in the reduction of hiding cover. The Beaver Creek herd unit will fall out of compliance (56 percent to 45 percent), and the Keep Cool herd units is currently at 32 percent (below standard) and an additional 3 percent of hiding cover will be removed.

Standard 3 also requires that thermal cover on winter range be maintained at or about 25 percent in blocks of at least 15 acres. Under alternative 1, the Beaver Creek and Keep Cool herd units fails to meet the thermal portion of this standard. This decision will further reduce thermal cover on winter range. A site-specific exemption to the standard is required. Because this thermal cover will be lost by natural means in the next decade or so and because this decision is not expected to negatively impact the elk population in hunting district 281, an exemption to the standard will be in order.</td></tr>
<tr><td>4. Implement an aggressive road management program to maintain or improve big game security. To decide which roads, trails, and areas should be restricted and opened, the Forest will use the following guidelines developed with the Montana Department of Fish, Wildlife, and Parks. The Forest visitor map will document the road management program.
4a. Road management will be implemented to at least maintain big game habitat capability and hunting opportunity. To provide for a first week bull elk harvest that does not exceed 40 percent of the total bull harvest, roads will be managed during the general big game hunting season to maintain open road densities with the following limits.
<table>
<tr><th>Existing Percent Hiding cover (according to FS</th><th>Existing Percent Hiding Cover (according to MDFWP</th><th>Max Open Road Density</th></tr>
</table></td><td>Standard is not met. Due to existing high open road densities and in the case of the Keep Cool herd unit a low percentage of hiding cover, neither herd unit is currently consistent with Forest Plan standard 4a. While open road densities would remain unchanged upon completion of the project, the reductions in hiding cover associated with the Decision would cause both herd units to further depart from the standard 4a thresholds. This situation is addressed in the site-specific Forest Plan amendment.

Forest Plan Standard 4(a) (Forest Plan II/17-18) requires that an aggressive road management program be implemented to maintain or improve big game security. Specifically, road management will be implemented to at least maintain big game habitat capability and hunting opportunity, which is measured by the relationship between hiding cover and open road densities. Due to existing high open road densities and reduced levels of hiding cover, alternative 1 does not meet Standard 4(a). While</td></tr>
</table>

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
<table><tr><td>definition of hiding cover) (1)</td><td>definition of hiding cover) (2)</td><td></td></tr><tr><td>56 49 42 35</td><td>80 70 60 50</td><td>2.4 mi/mi (2) 1.9 mi/mi (2) 1.2 mi/mi (2) 0.1 mi/mi (2)</td></tr><tr><td>(1) A timber stand which conceals 90 percent or more of a standing elk at 200 feet.</td><td>(2) A stand of coniferous trees having a crown closure of greater than 40 percent.</td><td></td></tr></table> The existing hiding cover to open road density ratio should be determined over a large geographic area, such as a timber sale analysis area, a third order drainage, or an elk herd unit.	open road densities would be unchanged, due to reductions in hiding cover, the decision will move further away from the plan threshold. A site specific exemption to this standard is included in this decision.
4b. Elk calving grounds and nursery areas will be closed to motorized vehicles during peak use by elk. Calving is usually in late May through mid-June and nursery areas are used in late June through July.	Forest Plan standard 4(b) requires that elk calving grounds and nursery areas be closed to motorized vehicles during peak use by elk. This is usually from late May through July. If elk calving and nursery areas are identified prior to or during project implementation, these areas will be protected. (Project design feature WL-13 ELK).
4c. All winter range areas will be closed to vehicles between December 1 and May 15. Exceptions (i.e., access through the winter range to facilitate land management or public use activities on other lands) may be granted.	Logging activities will be scheduled outside of the winter on winter range to address this standard.
4d. At restricted roads, trails, and areas, signs will be posted which tell: 1. Type of restriction; 2. Reason for restriction; 3. Time period of restriction; 4. Cooperating agencies.	This standard is met. All restricted roads, trails, and areas are posted and continually reposted with this information. All roads that are constructed as a part of the project will be posted with the appropriate restriction.
4e. Roads that will be closed will be signed during construction or reconstruction telling the closure date and the reason for closure.	This standard is met. Some roads will be closed temporarily during timber harvest to provide for safety of the public and crews. These roads will be signed and will provide the dates and reason for closure.
4f. Enforcement is a shared responsibility. Enforcement needs will be coordinated with the Montana Fish, Wildlife and Parks.	Standard is met as enforcement is coordinated with Montana Fish, Wildlife and Parks.
4g. Opened Forest roads will normally have a designed speed of less than 15 miles per hour. Exact design speeds will be determined through project planning. Loop roads are not recommended and will be avoided in most cases.	Standard is met. No loop roads are proposed with his project.
4h. The Forest Road Management Program will be developed in conjunction with Montana Fish, Wildlife and Parks and interested groups or individuals. The Road Management Program will contain the specific seasonal and yearlong road, trail, and area restrictions and will be based on the goals and objectives of the management areas in chapter III of the Forest Plan.	This standard is not applicable because the Stonewall Vegetation Project does not propose any changes to the current Forest's road management program.
4i. Representatives from the Helena Forest and Montana Fish, Wildlife and Parks will meet annually to review the existing Travel Plan.	This standard is not applicable because the Stonewall Vegetation Project does not propose any travel management changes. Montana Department of Fish, Wildlife, and Parks and Forest staff has been meeting regularly with regard to the Blackfoot Non-winter Travel Plan.
5. On elk summer range the minimum size area for hiding cover will be 40 acres and the minimum size area on winter range for thermal cover will be l5 acres.	This standard is met. Thermal and hiding cover have been modeled according to the Criteria for Wildlife Models Helena National Forest that specifies patch size as 40 acres for hiding cover and 15 acres for thermal cover.
6. Montana Cooperative Elk-Logging Study Recommendations, in appendix C of the Forest Plan, will be followed during timber sale and road construction projects.	Forest Plan Standard 6 (Forest Plan II/19 and C/1 -11) requires that the recommendations embodied in the Montana Cooperative Elk-Logging study (appendix C of the Forest Plan) be followed during timber sale and road construction projects. There are a total of eleven recommendations some of which have been incorporated as design elements as previously described. The following discussion describes the project's consistency with each of the eleven recommendations. 1. Security during logging operations – The Decision is consistent with this recommendation. Design features have been incorporated that confine logging to a single drainage at a time to minimize disturbance to elk (WL-14 Elk). Also, logging activities will be

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
	completed in the shortest timeframe possible. Use of firearms will be prohibited for anyone working within an area closed to the general public (WL-18 Elk). 2. Redistribution of elk –This recommendation is intended to plan timber sales in a manner that does not redistribute elk onto adjacent or nearby property. While elk movement will change during treatment, the Decision restricts timber harvest to a single drainage at a time to reduce displacement of elk; the Decision also restricts public access on temporary roads and closed roads used for hauling. It is not expected that changes in elk movement would result in impacts to private land. Therefore, the Decision is consistent with this recommendation. 3. Traditional home range use by elk – This recommendation is intended to ensure that timber harvest and road construction are planned to minimize impacts to elk and elk hunting. The Decision is consistent with this recommendation since all constructed roads will be closed to the public during logging operations and decommissioned post-implementation. Also there will be no changes in public access during implementation on temporary roads or closed roads that will be used for hauling. 4. Road construction and design – This recommendation is intended to maintain the integrity of elk movement patterns and provide security for unimpeded movement. There are slight decreases in elk security during project implementation; however, there will be no reduction in security following implementation. All constructed roads will be closed to the public during implementation and decommissioned afterwards. The Decision is consistent with this recommendation. 5. Road management – This recommendation is also intended to maintain elk security through management of road densities. Implementation of the Decision would result in a short-term (five years or less) increase in road density during implementation. New roads will not be opened to the public. Elk security will be maintained over the long-term; the Decision is consistent with this recommendation. 6. Area closures during the hunting season – This recommendation is intended to ensure that travel restrictions are carefully considered relative to elk management objectives so that hunting opportunities aren't unnecessarily impacted. There will be no changes in travel restrictions under the Decision and secure areas would continue to be available. The Decision is consistent with this recommendation. 7. Clear-cuts – This recommendation is intended to ensure that forage produced through clear-cutting is available to elk. The Decision is consistent with these considerations since slash be no taller than 1.5 feet in regeneration harvest units (project design feature WL-17 Elk), and there would be no change in public access. Opening size limitations of 100 acres will also be met. 8. Cover type – This recommendation is intended to ensure that cover types, important to elk, are considered during planning and implementation of silvicultural practices. The Decision is consistent with this recommendation since cover type data is available Forestwide (via Region 1-VMap) and has been used to identify and assess cover and forage. 9. Moist sites – This recommendation is intended to ensure that the integrity of moist sites is maintained

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
	since these areas comprise important components of elk habitat. The Decision is consistent with this recommendation; wetlands, riparian areas, and elk wallows will be buffered and protected during implementation. 10. Elk/cattle relationships – This recommendation is intended to ensure that forage may be created as a result of timber harvest remain available to elk. The Decision is consistent with this as grazing patterns or use will be modified if necessary to protect highly preferred forage species (WL-11 Vegetative Diversity). Winter range – This recommendation states that timbered areas adjacent to primary winter foraging areas should be managed to maintain the integrity of cover, and timber harvest should be scheduled outside of the winter period. The Decision is consistent with this recommendation since there would be no winter logging in elk winter range and forested areas will remain adjacent to forage areas following treatment.
7. Inventorying and mapping important big game summer/fall and winter ranges will continue.	The Forest will continue to work with Montana Fish, Wildlife, and Parks Area biologist to update our big game range maps. Inventory is ongoing as part of project-level analyses.
8. Any proposed sagebrush reduction programs will be analyzed on a case-by-case basis for the possible impact on big game winter range.	Standard does not apply. The Stonewall Vegetation Project does not propose any sagebrush habitat reduction.
9. Occupied bighorn sheep and mountain goat range will be protected during resource activities. Project plans for livestock, timber, or other resource development will include stipulations to avoid or mitigate impacts on their range. Conflicts between livestock and these wildlife species will be resolved in favor of the big game.	Standard does not apply to this project. No occupied bighorn sheep and mountain goat range in the project area.
10. Moose habitat will be managed to provide adequate browse species diversity and quantity to support current moose populations.	This standard is met. The project will increase forage for moose by opening up forest habitat and increasing growth of deciduous shrubs and tall forbs. Effects to moose are addressed through the discussion of effects to riparian habitat. Treatments that mimic disturbance processes (as is the case of this project) in wetlands and riparian zones are important in maintaining species richness and diversity, both plant and animal.

Forestwide Threatened and Endangered Species Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. A biological evaluation will be written for all projects that have potential to impact any threatened and endangered species or its habitat. All evaluations will address each projects potential to adversely modify a listed species habitat or behavior. If an adverse impact is determined, mitigation measures will be developed to avoid any adverse modification of a listed species habitat or behavior. If all possible mitigation measures do not result in an affect determination, then informal and/or formal consultation with the U.S. Fish and Wildlife Service will be initiated.	This standard will be met by applying current policy by completing Section 7 consultation and concurrence from the U.S. Fish and Wildlife Service prior to project implementation. A biological assessment was written for this project and formal consultation with the U.S. Fish and Wildlife Service was initiated. See C-91, project file.
2. Grizzly bear -- Apply the guidelines in appendix D to the management situation 1 and 2 (referred to essential and occupied prior to 1984) grizzly bear habitat on the Forest (see map in appendix D). Initiate field studies in undesignated areas known to be used by grizzlies, to determine if the areas should be designated as grizzly habitat. Until sufficient evidence is available to determine the status of these areas, manage them according to appendix E, Grizzly Management Guidelines Outside of Recovery Areas.	This standard is met. Project design features will be included for implementation of this project.
3. In occupied grizzly habitat, to minimize man-caused mortality the open road density will not exceed the 1980 density of 0.55 miles per square mile, which was determined to have little effect on habitat capability.	Open road density will not exceed standard for any moving window of time during implementation per design features. Grizzly bear impacts are analyzed in the biological assessment. Under the existing condition the open road density in occupied habitat as defined by the Forest Plan is 0.46 miles per square

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
	mile, meeting the Forest Plan standard. For this decision there will be a slight increase in open road densities during implementation due to the use of some currently closed roads and roads constructed then obliterated after implementation. This would result in open road densities of 0.49 miles per square mile for alternative 2 and 0.48 miles per square mile for alternative 3. Therefore, the Forest Plan Standard would continue to be met for both alternatives 2 and 3 during project implementation. Since this project would not change access management post-implementation, the open road density would revert back to the existing condition of 0.46 miles/square mile upon project completion (FEIS, pg 430).
4. Research activity on grizzly bears or their habitat will be reviewed by the Research Subcommittee of the Interagency Grizzly Bear Committee.	Research by the Interagency Grizzly Bear Committee is on-going.
5. Bald Eagle and Peregrine Falcon -- Continue working with the Montana Fish, Wildlife and Parks, the U.S. Fish and Wildlife Service, and the Bureau of Land Management to identify nesting and wintering areas. Identify nesting territories and roosting sites, and protect both from adverse habitat alteration. (Guidelines for how to identify bald eagle habitat are in the wildlife planning records.) Powerlines constructed within bald eagle or peregrine falcon habitat will be designed to protect raptors from electrocution. See appendix D for bald eagle and peregrine falcon habitat maps.	This decision includes propose treatments within suitable eagle nesting and foraging habitat, with implementation of design features the likelihood of impacts to nesting birds is low. As a result and because of the small amount of habitat treated and availability of unaffected nesting and foraging habitat along the Blackfoot River corridor, this decision is consistent with Forest Plan (USDA Forest Service 1986) direction to; provide habitat for small game, furbearers and other wildlife species (page II/4) and to ensure that viable populations of existing native and desired nonnative species are maintained (p. II/17). Project area lacks suitable cliffline nesting and/or roosting habitat.
6. Gray Wolf -- With the U.S. Fish and Wildlife Service and Montana Fish, Wildlife and Parks, investigate reported gray wolf observations to confirm or deny gray wolf presence. If presence of gray wolf is confirmed, determine if the habitat is necessary for the wolves' recovery. If the habitat is necessary, coordinate with the Montana Fish, Wildlife and Parks and the U.S. Fish and Wildlife Service to implement the Wolf Recovery Plan. See appendix D for gray wolf habitat map.	Wolves are known to occur within the general vicinity of the project area. Also suitable den, foraging and rendezvous habitat is present. Wolves have recently been delisted in Montana (USDI Fish and Wildlife Service 2011a) and the gray wolf is evaluated as a Forest Sensitive Species. While the decision will affect suitable foraging habitat, big game populations would be maintained or improved. Long-term human access will not be increased and remote habitat will be maintained; no new system roads will be constructed and all roads built will be obliterated immediately following timber removal and will be closed to public access during implementation. Risks of large-scale wildfire would be reduced.
7. No known threatened or endangered plants are on the Helena National Forest.	This standard is being met. There are no known threatened or endangered plants on the Helena National Forest. See project file.
8. Species of Special Concern - There are habitats on the Forest where the following species of special concern may be found (Plant Species of Special Concern, USDA-FS, l980) Lemhi penstemon (*Penstemon lemhiensis*), Howell's gumweed (*Grindelia howellii*), Missoula phlox (*Phlox missoulensis*), Cliff toothwort (*Cardamine rupicola*). Missoula phlox and cliff toothwort have been located on the Helena National Forest. Other plants that are termed rare have also been located on the Helena National Forest. They are Klaus' bladderpod (*Lesquerella plausii*) and long-styled thistle (*Cirsium longistylum*). Two additional rare plants, moschatel (*Adoxa moschalellina*) and lesser rushy milkvetch (*Astragalus connvallarius*) are believed to occur on the Helena National Forest but currently have no occurrence records. If any of these species are verified on the Helena National Forest, appropriate measures, pursuant to Section 7 of the Endangered Species Act, will be taken.	After completion of the Forest Plan in 1986, the Regional Forester designated sensitive plant species for Region 1 and has periodically updated the list. The current Region 1 sensitive species list was updated in 2011. Whitebark pine is the only sensitive plant species that has been found to date in the project area. This decision is consistent with Regional direction, Forest Plan Standards and Guidelines and the Endangered Species Act. If any additional species of special concern were verified in the project area, appropriate measures will be taken.

Forestwide Old Growth Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
An old growth stand is generally characterized by a high level of standing and down, dead and rotting woody material; two or more levels of tree canopies and a high degree of decadence indicated by heart rot, mistletoe, dead or broken tree tops, and moss.	This standard applies and is being met with this decision. Approximately 5 percent of each of the third order drainages associated with the project have been designated for old growth management. The designation protocol included consideration of all the priority criteria listed by this standard. No Forest Plan

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
Five percent of each third order drainage should be managed for old growth. The priority for old growth acres within each drainage is: first, land below 6,000 feet in elevation; second, riparian zones and mesic drainage heads; and third, management areas emphasizing wildlife habitat. These areas will normally be managed on a 240 year rotation and will range from 10 acres to several hundred acres. Management areas other than T-1 through T-5 will be the primary source for old growth. However, if adequate old growth area cannot be achieved then the T management areas will be considered to meet old growth objectives.	designated old growth will be treated with this decision. Refer to the Habitats of Special Concern Report. Please also refer to the project file for detailed information regarding old growth designation protocols (USDA 2012c, HNF Old Growth Process). Stands having old growth characteristics will be burned with a low-intensity fire to minimize mortality to trees greater than 17 inches diameter-at-breast-height and consumption of down woody material. Burn planning and implementation will be conducted in consultation with Timber/Silviculture. No old growth will be treated within harvest units. (WL-30 and WL-31).

Forestwide Snag Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. To keep an adequate snag resource (standing dead trees) through the planning horizon, snags should be managed at 70 percent of optimum (average of 2 snags/acre) within each third order drainage.	This standard is met. There will be snags well in excess of this level in each third order drainage. (WL-5).
2. Snag management guidelines need not be applied within a quarter mile of riparian areas, because riparian Standards should provide for adequate snags.	This standard is met. Riparian standards are being followed with this decision. S/WS/F -16 and S/WS/F -17.
3. Larch, ponderosa pine, Douglas-fir, spruce, and subalpine fir, in that priority, are the preferred species for snags and replacement trees (live trees left to replace existing snags).	This standard applies and is met (WL- 5 and WL-8).
4. Management areas other than T-1 should be the primary source for snag management. However, if adequate snags cannot be found outside of T-1, then the following numbers and sizes of snags should be retained in cutting units, if available. A. In units with snags, keep a minimum of 20 snags and 10 replacement trees per 10 acres, if available. If 20 snags are not available, then any combination totaling 30 should be left, by the following diameter-at-breast-height classes: • 13 snags and 6 replacement trees from 7-11 inches; • 5 snags and 3 replacement trees from 12-19 inches; • 2 snags and 1 replacement trees 20+ inches B. In units--except those of pure lodgepole--without snags keep a minimum of 30 wind firm trees per 10 acres, if available, by the following diameter-at-breast-height classes: • 21 trees from 7-11 inches; • 7 trees from 12-19 inches; • 2 trees from 20+ inches If wildlife funds are available, a third of the replacement trees should be girdled or otherwise killed to provide snags, by the following diameter-at-breast-height classes: • 7 trees from 7-11 inches diameter-at-breast-height; • 2 trees form 12-19 inches diameter-at-breast-height; • 1 tree form 20+ inches diameter-at-breast-height.	This standard applies and is met. Snags are available across multiple management areas in the project area. For this decision, snags are primarily provided for outside of treatment units, although snag retention guidelines are prescribed. Also, replacement snags will be provided by green trees of species other than lodgepole that will be retained to the extent possible in regeneration harvest units; and to the desired density of generally the largest and healthiest trees available in intermediate harvest units. In addition, snags will be created as a result of prescribed burning implementation. Forest Plan snag guidelines will be incorporated in silvicultural prescriptions.

Forestwide Fisheries Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Maintain quality water and habitat for fish by coordinating Forest activities and by direct habitat improvement (see Forest Wide Standards for riparian).	This standard is met. Sediment impacts to fisheries under this decision were analyzed for this project and indicate impacts will be limited to three to five years and will be partly offset through mitigation completed and planned. A summary of project effects is included in the Aquatic Section of the final environmental impact statement. (S/SW/F – 15).
2. Instream activities should allow for maximum protection of spring and fall spawning habitats.	Standard will be met. No new culverts or instream structures will be installed as part of this project. If needed, best management practices will be in place to minimize impacts to and fish bearing habitat (S/SW/F- 15).

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
3. Structures installed within streams supporting fisheries will be designed to allow upstream fish movement, especially to spawning areas.	This standard does not apply to this project. No fish structures are proposed in this project.

Forestwide Range Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Riparian condition within livestock allotments will be mapped and become part of the Allotment Management Plan.	This standard does not apply to this project.
2. Where analysis shows range resource damage, the cause will be identified and corrective action will be initiated through an allotment management plan.	This standard does not apply to this project.
3. Chemical spraying should not be used on sagebrush control projects if other control methods are feasible.	Standard is being met. No chemical control of sagebrush is planned for the Stonewall project.
4. Best management practices (BMP) will be used to minimize livestock damage to lakeside soils, stream-sides, and other fragile areas.	This standard does not apply to this project.
5. Allotment management plans will specify the utilization Standards of key plant species needed to protect the soil and water quality. Allowable forage utilization of these plants should be based on local range conditions, soil stability, and known individual plant requirements. The guides for allowable utilization of key species, by condition classes, are in the Range Management Handbook (FSH 2209.21).	This standard does not apply to this project. No range allotment management is proposed in this project.
6. Allotment Management Plans will be developed using the interdisciplinary process.	This standard does not apply to this project. No range allotment management is proposed in this project.

Forestwide Noxious Weeds Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Implement an integrated weed control program in cooperation with the state of Montana and County Weed Boards to confine present infestations and prevent establishing new areas of noxious weeds. Noxious weeds are listed in the Montana Weed Law and designated by County Weed Boards. (See appendix X of the Forest Plan, Noxious Weeds.)	This standard is met. This project incorporates the Helena National Forest Weed Control program. The Helena National Forest Noxious Weed Vegetation Treatment Environmental Impact Statement (USDA Forest Service 2006b) is part of the project file. This standard will be met by project design feature, NOX-1.
2. Integrated Pest Management, which uses chemical, biological, and mechanical methods, will be the principal control method. Spot herbicide treatment of identified weeds will be emphasized. Biological control methods will be considered as they become available.	This standard is met. This analysis considers integrated pest management with the estimates of weed spread and control. The Helena National Forest Noxious Weed Vegetation Treatment Environmental Impact Statement (USDA Forest Service 2006b) is part of the project file. This standard will be met by project design feature, NOX-1.
3. Funding for weed control on disturbed sites will be provided by the resource which causes the disturbance.	Treatment schedules for treatment of noxious weeds associated with project activities are included in the design features – appendix B of this record of decision.

Forestwide Revegetation Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Seeding will be done in a timely manner on disturbed areas, to prevent erosion and to achieve best revegetation results.	This standard will be met by project design features (NOX-2, 3 and 4).
2. Seeding mixtures of native plants (naturally occurring) should be used, if practical, in all revegetation projects greater than two acres. On smaller disturbances, the responsible official may authorize the use of exotic species.	This standard will be met by project design feature (NOX-3).
3. Seeding guidelines, based on elevation, soil type, parent material, habitat type, and reasonable cost, are listed in appendix F of the Forest Plan.	This standard will be met by project design features. (NOX-2, 3 and 4).

Forestwide Timber Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Silvicultural examinations and prescriptions will be required before any timber manipulation or silvicultural treatment takes place. Exceptions include cutting of trees that block vision along	Site specific prescriptions will be completed by a certified silviculturist prior to implementation. Field visits, stand examinations, and Forested Inventory Analysis intensified grid

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
roads, cutting hazard trees, clearing right-of-way, clearing for mineral development, minor and incidental amounts of free use, and cutting personal firewood. Final determination of what silvicultural system will be used for a particular project will be made by a certified silviculturist after an on-the-ground site analysis. This site specific analysis will determine the appropriate even or uneven age silvicultural system that best meets the goals and objectives of the management area. Standards for applying all silvicultural systems, as well as supporting research references are in the Northern Region guide (June 10, 1983). In addition, broad guidelines are found in appendix H and M. Even aged management methods will be used only where it is determined to be appropriate to meet objectives. Clearcutting will be used only where it is the optimum method.	plots have been conducted within the project area to inform the analysis. Prescriptions utilize a variety of timber harvest and prescribed fire systems described in detail in the Silviculture Report (SILV-1, SILV-2, SILV-3, SILV-4 and SILV-5).
2. Tree improvement will be conducted in accordance with the current Regional and Forest level tree improvement plans.	Standard is being met on the Helena-Lewis and Clark National Forest but does not apply to this project – there are no tree improvement activities associated with this decision.
3. Transportation plans and logging systems must be designed jointly to provide for long-term stand management, with full consideration given to topography and slope, the overall economic efficiency of roading and yarding costs, and the needs of other resources.	Standard is met. This has been completed as part of the design of this project and incorporated into this decision. It is located in the project record.
4. Timber stand openings created by even-aged silvicultural systems will normally be 40 acres or less. Creation of larger openings will require a 60-day public review and Regional Forester approval. Exceptions are listed in the Northern Regional Guide.	Standard is met. Openings over 40 acres will be created but exceptions to the Regional Forester approval process apply due to insect-caused mortality as described in the Findings Related to Law, Regulation and Policy section in the record of decision. The Stonewall Vegetation Project final environmental impact statement process served to notify the public and document the need for the unit size.
5. A feasibility analysis of each sale over one million board feet will be made to assure that it has been designed with the most cost-effective measure possible in keeping with environmental concerns. This analysis will examine strategic items in the sale design process to assure consideration of economic impacts of these items on the sale value. A cash flow analysis will be done to determine the viability of the sale with current market conditions. If anticipated costs are higher than predicted high bids, consider the following: a. Defer the sale until economic conditions would indicate receiving higher bids. b. Proceed to sell the timber and provide proper documentation that benefits, other than immediate monetary return from the timber, are of importance.	This standard is met. This has been completed and it is documented in the economic specialist report for the Stonewall Vegetation project.

Forestwide Firewood Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. The Helena Forest will generally charge a fee for personal use firewood. The Regional Office will annually determine the fee. Designated free firewood areas will continue only as long as demand is less than supply.	Not applicable to the Stonewall Vegetation Project because the project does not have any free firewood permit areas.
2. Logging areas will be open to public firewood gathering after the sale is closed and prior to burning logging debris and closing roads, if wood is available and other resource values, such as wildlife snags, downed logs, and soils, can be protected.	This standard applies and is met by design feature FUEL-1.
3. Promote a green firewood program where desirable for resource management for both commercial and private firewood gatherers.	Not applicable to the Stonewall Vegetation Project because the project does not propose any green firewood program with this decision.
4. The public will be informed of firewood gathering opportunities through the local media. Maps and directions to firewood gathering areas will be available at Forest Service offices.	Map and directions to treatment units with firewood opportunities will be made available at Forest Service offices.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
5. Permits will be required whenever tractors, rubber-tired skidders, jammers, or other yarding equipment normally used by the logging industry are used for yarding firewood.	Not applicable to the Stonewall Vegetation Project because no equipment is proposed for yarding firewood with this decision.
6. Providing firewood will be emphasized as a slash treatment method.	This standard applies and is met by design feature FUEL-1.

Water, Soil, and Air
Forestwide Municipal Watershed Guidance Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Municipal watersheds will be managed under multiple-use concepts and direction. Management area guidelines will identify permissible land uses, restrictions on land uses, and special measures required to ensure a high quality and quantity municipal water supply. Presently, there are two municipal watersheds on the Forest, Tenmile and McClellan.	Not applicable to the Stonewall Vegetation project because there are no municipal watersheds located within the project area.
2. Design and implementation of projects within the watershed will be guided by FSM 2542.12, as well as specific management area Standards and guidelines.	Not applicable to the Stonewall Vegetation project because there are no municipal watersheds located within the project area.
3. An environmental analysis will be prepared in coordination with the concerned municipality and the State Water Quality Bureau for each new project proposed within the municipal watershed which could potentially result in degradation of water quality.	Not applicable to the Stonewall Vegetation project because there are no municipal watersheds located within the project area.
4. Each project implemented in the municipal watersheds will have a designated Forest Service representative responsible for maintenance of water quality within appropriate state Standards. Each contractor will designate a representative, who will normally be at the project site, with the authority to take whatever action necessary to remedy any situation which might result in violation of state water quality Standards.	Not applicable to the Stonewall Vegetation project because there are no municipal watersheds located within the project area.
5. Plans and specifications for projects proposed for municipal watersheds will be coordinated with the municipality involved and submitted to the Montana State Department of Health and Environmental Sciences for review and approval as required by Montana Laws regarding public water supply as amended by Chapter No. 556, l979, 75-6-112.	Not applicable to the Stonewall Vegetation project because there are no municipal watersheds located within the project area.

Forestwide General Watershed Guidance

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Coordination with the State of Montana, as required by the Clean Water Act (33 U.S.C. 1323), concerning stream channels and water quality protection is detailed in the Cooperative Agreement to Implement the 208 Program on National Forests in the State of Montana. The agreement is in FSM 2563.11, R.O. Supplement.	This standard is met. A copy of the Stonewall Vegetation project has been sent to the State of Montana. Furthermore, all required state permits will be obtained prior to implementation of the project.
2. Watershed improvement projects will be identified, prioritized, and developed on a watershed basis (see appendix T).	Not applicable to the Stonewall Project specifically, although improvement projects are considered on a watershed basis.
3. A project which causes excessive water pollution, undesirable water yield, soil erosion, or site deterioration will be corrected where feasible, or the project will be re-evaluated or terminated.	This standard is met. Based on the analyses done in the Stonewall Vegetation Hydrology report to evaluate measurement indicators related to hydrology, this decision will not cause excessive water pollution, undesirable water yield, soil erosion or site deterioration.
4. Projects involving significant vegetation removal will, prior to including them on implementation schedules, require a watershed cumulative effects feasibility analysis to ensure that water yield or sediment will not increase beyond acceptable limits. The analysis will also identify opportunities, if any exist, for mitigating adverse effects on water-related beneficial uses.	This standard is met. This analysis has been performed and is documented. In short, water yield is not expected to increase with this decision. The analysis for this decision included modeling to predict sediment delivery associated with treatments and temporary road construction. This project is predicted to have a net reduction in sediment delivery to stream channels, with improvements to haul roads reducing sediment.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
5. Practices in the Soil and Water Conservation Practices Handbook (FSH 2509.22) developed cooperatively by the State Water Quality Agency and the Forest Service will be incorporated, where appropriate, into all land use and project plans as a principal mechanism for controlling non-point pollution sources and meeting soil, State water quality Standards and other resource goals.	This standard is met. Soil and Water Conservation Practices have been incorporated into the Stonewall Vegetation Project and are discussed in the both the Soil Specialist Report and the Hydrology Specialist Report.
6. Water rights for non-consumptive water use (instream flows) necessary to maintain fisheries habitat, recreational uses, or other beneficial water uses will be claimed for appropriate waterbodies and streams.	Not applicable to the Stonewall Vegetation project as no water rights for non-consumptive uses will be claimed in relation to this project.
7. An environmental analysis, following the process in Forest Service Manuals 2526 and 2527, will be made for all management actions planned for flood plains, wetlands, riparian areas, or bodies of water prior to implementation. This analysis will determine the short- and long-term adverse impacts and mitigating measures associated with the planned management actions.	This standard is met. No ground-disturbing activities are proposed in floodplains, wetlands, or bodies of water. This standard applies and is met by design feature S/SW/F-16, S/SW/F-17 and S/SW/F-22.
8. Water transmission lines, dams, and hydro-meteorological data sites will be maintained by the permittee in a safe and serviceable condition. Unsafe or unserviceable facilities will be repaired to approve engineering Standards or removed from service.	Not applicable to the Stonewall Vegetation Project because no such sites would be affected by the proposal.
9. Activities that might affect the validity of data collected at hydro-meteorological data sites will be coordinated with the permittee or cooperating agency before implementation of the project.	Not applicable to the Stonewall Vegetation Project because no such sites would be affected by the proposal.
10. Applications for hydropower, water diversion, water storage, or other water-related facilities will be evaluated on a case-by-case basis. The applicant may be required to use private consultants or other personnel to make environmental studies needed by the Forest Service and/or state agencies for evaluation of the proposal. Close coordination and cooperation with other agencies where appropriate will be sought.	Not applicable to the Stonewall Vegetation Project because no such applications are proposed or considered as part of any Alternative.
11. Instream flows adequate to protect the aquatic environment will be maintained during any project which removes water from any stream.	Not applicable to the Stonewall Vegetation Project because no water would be removed from the stream as part of any Alternative.

Forestwide Airshed Guidance

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Management activities that affect air quality will comply with Federal and state Standards and the Montana Cooperative Smoke Management Plan. (The Plan is part of Fire Planning Records.)	This standard will be met by project design features AIR – 1 and 2. Implementation of this decision will be compliant with the Forest Plan because all prescribed fire operations must comply with Federal and State standards and the Montana Cooperative Smoke Management Plan.
2. Protect air quality by cooperating with Montana Air Quality Bureau in the Prevention of Significant Deterioration (PSD) program and State Implementation Plan (SIP).	This standard will be met by project design features AIR – 1 and 2. Regardless of any action, any Forest Service treatments either ongoing or planned will be required to adhere to air quality standards and direction as outlined in the Forest Plan.

Forestwide Soil Guidance

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. In accordance with National Forest Management Act, Resource Protection Act, and Multiple Use-Sustained Yield Act, all management activities will be planned to sustain site productivity. During project analysis, ground disturbing activities will be reviewed and needed mitigating actions prescribed.	Meets: The Stonewall Vegetation Project complies with Forest Plan soil guidance because effects from soil disturbance would not be an irreversible commitment of resources (refer to Soils Specialist Report), and thus would not cause permanent impairment of the productivity of the land in accordance with National Forest Management Act, Resource Protection Act, and Multiple Use-Sustained Yield Act. In addition, proposed ground disturbing activities have been reviewed for the Stonewall Vegetation Project and necessary design features have been prescribed including erosion control measures for all areas of soil disturbance, especially granitic soils.
2. Areas of decomposed granite soils will be identified and erosion control measures planned prior to any ground disturbing activities.	This standard is met. Granitic soils have been identified in the project area and the design features have been prescribed and

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
	incorporated into this decision – appendix B of this record of decision to minimize erosion.
3. To reduce sedimentation associated with management activities, the highly sensitive granitic soils, which cover about 20 percent of the Forest, will have first priority for soil erosion control.	This standard is met. Granitic soils have been identified in the project area and the design features have been prescribed and incorporated into this decision – appendix B of this record of decision to minimize erosion.

Forestwide Minerals General

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. The 1964 Wilderness Act stipulates that effective December 31, 1983, no further mineral entry would be permitted in existing wilderness areas. This includes leasing for oil and gas, applying for patent on existing claims, and staking new claims. However, citizens' rights to enter public land for prospecting or working valid existing claims are unchanged.	Standard does not apply. Project area does not include wilderness.
2. Areas withdrawn from mineral entry should be reevaluated every five years in accordance with Federal Land Policy and Management Act (FLPMA) to determine if the withdrawal is still necessary. (See appendix Q of the Forest Plan.)	Standard is being met because no areas are being withdrawn from mineral entry.
3. Access for development of locatable and leasable minerals will be allowed on a case-by-case basis. Access should be directed toward minimizing resource impacts and be coordinated with other land uses.	Standard being met because access is not being precluded in relation to this project.

Forestwide Locatable Minerals

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Consistent with the Mining and Mineral Policy Act of 1970, continue to encourage the responsible development of mineral resources on National Forest lands. Concurrently, require mitigation measures to protect surface resources.	Standard is being met because development of minerals is not being precluded in relation to this project.
2. Provide guidance to miners and prospectors for planning reclamation and to minimize environmental damage.	Standard does not apply. Project is not related to giving guidance to miners.
3. Increase I&I efforts through publicizing the appropriate laws, regulations, and policies, to reduce cases of non-compliance from lack of knowledge of mining rules.	Standard does not apply. Project is not related to giving guidance to miners.
4. Increase compliance inspections commensurate with mineral activities.	Standard does not apply. Project is not related to giving guidance to miners.
5. When every reasonable attempt has failed to correct mining operations that are unnecessarily or unreasonably causing or threatening to cause irreparable injury, loss, or damage to surface resources, the Forest Service will seek judicial relief.	Standard does not apply. Project would not interfere with regulation of mining operators.
6. Maintain a liaison with local mining industry and mining associations. Cooperate with Federal and State agencies which administer mineral laws.	Standard does not apply. Project would not interfere with regulation of mining operators.
7. Following mineral development the Forest Service will require reclamation of surface disturbance to prevent or control on- and off-site damage. Reclamation includes, but is not limited to: a. Control of erosion and landslides. b. Control of water runoff. c. Isolation, removal, or control of toxic materials. d. Reshaping and revegetation of disturbed areas. e. Rehabilitation of fisheries and wildlife habitat.	Standard does not apply. Project would not interfere with regulation of mining operators.

Forestwide Saleable Minerals

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Common variety mineral permits will be considered on a case-by-case basis and will be issued only if consistent with the management area goals.	Standard does not apply. Project would not interfere with regulation of mining operators.

Forestwide Leasable Minerals

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
See record of decision for Helena National Forest and Elkhorn Mountains Portion of the Deerlodge National Forest Oil and Gas Leasing EIS.	Standard does not apply. Project would not interfere with regulation of oil and gas leasing.

Forestwide Seismic Exploration

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. An environmental analysis will be completed for each application. A prospecting permit will be issued on a case by case basis and will contain stipulations designed to coordinate surface resource values. The following apply where appropriate: a. Water quality and quantity: Stipulations may be issued to limit activities within 100 feet of all streams, lakes, springs, and ponds; b. Threatened and endangered species habitat: Stipulations will be issued to protect threatened and endangered species by limiting activities during critical periods, and protecting important habitat elements; c. Nongame habitat: Stipulations may be used to limit surface use as a coordination and/or mitigation measure for species listed in State of Montana, Species of Special Interest and Concern. (The State species list is part of the Wildlife Planning Records.); d. Big game habitat: To protect key areas for big game (i.e., winter range, summer concentration habitats, calving areas, lambing areas, big game travel routes, etc.), stipulations may be used during critical periods; e. Archeological and Historic Resources: Proposed seismic survey work which may impact identified cultural and paleontological resources will be required to skip portions of the work or to relocate survey lines around known resource areas. Other resource threatening work will be required to fully comply with the Antiquities Act of 1906 and other related Acts pertaining to cultural resources; f. Special Uses, Leases, and Permits: To protect authorized special uses, leases, and permits, include stipulations to restrict occupancy by timing and location on a case-by-case basis; g. Fire: Seismic work during periods of high fire danger may not be allowed. To prevent wildfire, stipulations may be included to restrict timing and location of seismic operations. Stipulations may also be used to specify procedures and firefighting equipment required by seismic crews; h. Land Stability and Erosion: Surface occupancy stipulations may be used to prohibit occupancy on lands subject to mass wasting and on slopes 60 percent and greater; i. Recreation: To accommodate concentrated recreational areas (i.e., picnic grounds and campgrounds), stipulations may be used to restrict seismic activities by location and timing.	Standard does not apply. Project would not interfere with regulation of seismic exploration operations.

Forestwide Land Uses Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Approve special use permits only when they comply with the goals of the management area affected. Appendix O provides guidelines for special uses and subdivisions.	Standard does not apply. Project does not include the approval of special use permits.
2. Enhance resource management by working with other agencies and landowners to develop and achieve common resource objectives.	Standard met through scoping, public meetings and public comments.
3. The Forest will encourage governing entities to proceed with land use planning and zoning prior to subdivision development on lands adjacent to or within the Forest boundary.	Standard does not apply. Project does not include land use planning and zoning decisions.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
4. Developers should provide for all necessary services within the limits of the subdivision without infringing on adjacent National Forest lands. But National Forest lands adjacent to subdivisions can be used for services associated with primary access and/or primary utility corridors if these services cannot reasonably be incorporated within the subdivision, or on other adjacent or nearby properties not administered by the Forest Service.	Standard does not apply. Project does not involve subdivisions.
5. The Forest Service will attempt to inform non-Federal landowners and land developers adjacent to the Forest of the management direction on the Forest land.	Standard met through open houses, scoping, public comments and Forest website.
6. Adjacent private lands will not preclude multiple use management of lands administered by the Forest Service. But management of Forest Service land will be modified where appropriate and necessary to complement land uses on adjacent non-Federal property.	Standard is met through the design of treatments adjacent to private land and infrastructure as an integral component of the purpose and need for this project area and included in this decision.
7. When an environmental analysis for a proposed Forest project indicates that activities on adjacent land will require Forest Service management activities to be restricted to protect soil, water, and wildlife resources, the necessary restrictions will be determined. If no activity on Forest land is possible, the desired management will be scheduled for later decades when sufficient recovery has occurred on adjacent lands to permit the proposed activities on Forest Service land to continue. Exceptions to this policy will be considered on a case-by-case basis, when deferring management would result in adverse impacts to other Forest resources.	Standard is met through the application of best management practices and project design features.

Forestwide Landownership Adjustment Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. A landownership adjustment schedule for the Helena Forest will be developed using the following criteria: a. The priority for acquisition will be for lands with assessed high wildlife, recreation, and watershed values. Acquisition may entail purchase or donation of fee simple or partial interests, such as conservation and scenic easements, or exchange procedures; b. Emphasize acquisition of land and interests in land to allow access to all Helena National Forest lands; c. Emphasize acquisition of trailhead facilities and trail rights-of-ways, especially to wilderness and dispersed recreation areas; d. d. Consider disposal of tracts where past patenting has resulted in isolated, intermingled National Forest ownerships, such as at York, Rimini, and Unionville.	Standard does not apply. Project does not include land use planning and zoning prior to subdivision development activities as part of this project.

Forestwide Administration Facilities Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Provide a cost effective program of maintenance to necessary administrative facilities. This will protect the investment, provide for public and employee's health and safety in accordance with current building codes and Standards, and present a neat, well-kept appearance in harmony with its surroundings.	Not applicable to the Stonewall Vegetation Project because no new administrative facilities are in the area, or impacted by this decision.
2. Construct new administrative facilities to replace existing structures that are no longer cost effective to maintain or expand or are inadequate to serve the needs of resource management.	Not applicable because the Forest Service would not construct new facilities to replace existing structures as part of this project.

Forestwide Road Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Road construction and reconstruction will be the minimum density, cost, and standard necessary for the intended need, user safety, and resource protection.	This standard is met. The minimum road work is proposed to provide for safe access and product removal from the proposed timber units in this decision. Road best management practices work is included in this decision to provide for improved

	resource protection and watershed conditions associated with reduction in sedimentation.
2. Forest development roads will not be constructed without an approved Area Transportation Analysis. Other road construction will be evaluated on a case-by-case basis.	This standard is met. No new construction of permanent National Forest System roads is proposed with this decision.
3. Forest Specialists representing soils, watershed, and fisheries shall identify potential soil erosion, water quality and fisheries problems and provide input to the development of road design standards. Mitigating measures which will be considered in developing these standards include but not limited to: a. Reestablishing vegetation on exposed soils; b. Protecting the road surface through surface stabilization techniques such as dust oil or gravel, especially on decomposed granitic soils; c. Preventing downslope movement of sediment with the use of slash windrows below the fill slopes near stream crossings, baled straw in ditches and catch basins at culvert inlets; d. Reducing soil disturbance in or near streams by diverting clear water around culvert installation sites, especially in important fisheries streams; and e. Controlling the concentration of water flow by insloping, outsloping and using minimum grades at stream crossings.	This standard is met. Specific items included in this standard are addressed through referencing the soils, hydrology, aquatics and transportation reports for road construction, reconstruction and maintenance recommendations, this includes the decommissioning of temporary roads upon project completion. Design features for all resources which are included as part of this decision are listed in appendix B of this record of decision.
4. Short term local roads will be used for one time road access needs.	This standard is met. Temporary roads used for the Stonewall Vegetation Project will meet this standard for short term local roads.
5. Coordinate transportation planning and road management with State and local agencies and owners of intermingled land.	This standard is met. There are county and state roads identified as necessary for haul in this decision. Coordination with these agencies is underway and will be completed prior to use and haul, in accordance with the Forest Plan.

Forestwide Road Management Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. The Helena National Forest will generally be open to vehicles except for roads, trails, or areas which may be restricted. (See Forest Visitor Map for specific information.) The Forest Road Management Program will be used to review, evaluate, and implement the goals and Standards of the management areas in the Forest Plan with regard to road, trail, and area wide motorized vehicle use.	This standard is met. No changes in existing travel management direction are proposed under this decision with respect to allowed uses and roads available for public use.
2. Road management decisions will be based on user needs, public safety, resource protection, and economics. Most existing roads will be left open. But most new roads will be closed, at least during critical periods for big game. The criteria to be used for road, trail, or area restrictions are as follows: a. Safety - Restrictions may be necessary to provide for safety of Forest users; b. Resource Protection - Unacceptable damage to soils, watershed, fish, wildlife, or historical/archaeological sites will be mitigated by road restrictions or other road management actions as necessary. Restrictions for wildlife reasons will be coordinated with the Montana Fish, Wildlife and Parks; c. Economics - Restrictions will be considered if maintenance costs exceed benefits; d. Conflicting Use - Conflicts between user groups (especially motorized vs. non-motorized) may require restrictions; e. Facility Protection - Restrictions may be necessary to prevent damage to administrative sites, special use facilities, or other improvements; f. Public Support - Public concern may necessitate restricting or opening some roads, trails, or areas; g. Management Objectives - Road management will be used to achieve land management objectives.	This standard is met. No changes in existing travel management direction are proposed under this decision with respect to allowed uses and roads available for public use. All temporary roads constructed for this project will be closed to the public, only being used for administrative use only.
3. The travel restrictions will be reviewed annually and revised as necessary to meet the goals and objectives of the Forest Plan.	This standard is met. No changes in travel management direction are proposed under this decision with respect to allowed uses and

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
	roads available for public use, as the scope of the project is associated with implementing proposed vegetation treatments.
4. Enforcement of the Road Management Program will be a high priority. Weekend patrolling, signing, gating, obliterating unnecessary roads and public education will be used to improve enforcement. Enforcement will be coordinated with the Montana Fish, Wildlife and Parks and other State and local agencies.	This standard is met. No changes in travel management direction are proposed under this decision with respect to allowed uses and roads available for public use. Short-term delays and closures are planned in order to provide for public safety during implementation of the vegetation treatments and product haul.

Forestwide Road Maintenance Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Roads will be maintained in accordance with direction provided in Forest Service Handbook 7709.15 (Transportation System Maintenance Handbook) and will be at a level commensurate with the need for the following operational objectives: resource protection, road investment protection, user safety, user comfort, and travel efficiency.	This standard is met. Road maintenance and reconstruction in this decision will be performed in accordance with the Forest Plan and the Montana and Region 1 best management practices. Specifically, this standard will be met by project design features (RDS-1 and S/WS/F – 19).
2. Assigned maintenance levels will be reviewed annually and revised if management objectives change.	This standard is met. No changes in assigned maintenance levels are proposed with this decision.
3. A Forest road maintenance schedule will be prepared annually and be responsive to the long term needs of the Forest transportation system.	Not applicable to this project, though there are several roads proposed in this decision for maintenance and reconstruction to accommodate safe product haul while providing for minimal negative resource impacts.
4. Forest specialists representing soils and watershed shall provide input to the road maintenance planning process to verify maintenance Standards, identify rehabilitation needs, and designate roads which should be permanently closed for resource protection. Specialists will annually submit capital investment project proposals for major road reconstruction needs.	This standard is met. Forest Fisheries and Hydrology Specialists have identified potential soil erosion, water quality and fisheries problems and provided input to the development of road design standards. This report includes an analysis of existing roads that have been identified as sediment sources. Most of these sediment sources are being addressed through project-related road improvements. Specifically, this standard will be met by project design features (RDS-1 and S/WS/F – 19).

Forestwide Trails Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Trail management, such as trail Standards, maintenance schedules, funding, trail use, construction, and reconstruction, will follow the guidance in Trails Management Handbook, Forest Service Handbook 2309.18.	Not applicable to the Stonewall Vegetation Project because no activities are proposed to existing trails with this decision.
2. Generally, trail maintenance work priorities will be established as follows: a. Priority 1. Activities to correct unsafe conditions relative to management objectives. b. Priority 2. Activities to minimize unacceptable resource and trail damage. c. Priority 3. Activities that restore the trail to plan design Standards.	Not applicable to the Stonewall Vegetation Project because no activities are proposed to existing trails with this decision.
3. Trail construction/reconstruction will be designed and accomplished to be compatible with the recreation settings and management area goals.	Not applicable to the Stonewall Vegetation Project because no activities are proposed to existing trails with this decision.
4. Trails may be abandoned or rerouted when a road changes the character of the trail or when the maintenance cost exceeds the benefit.	Not applicable to the Stonewall Vegetation Project because no activities are proposed to existing trails with this decision.

Forestwide Protection - Insect and Disease Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Silvicultural systems will be the primary tool for preventative pest management. Use silvicultural systems to: (1) improve species diversity, growth, and vigor for stands and (2) increase the size diversity and class diversity between stands.	The standard applies and is met for the decision because treatments will occur that remove trees impacted by the beetle outbreak, and promote growth and vigor of future forests. These objectives are part of the project design and described in detail in

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
	the purpose and need for the project in chapter 1 of the final environmental impact statement and the decision rationale in the record of decision.
2. During ongoing infestations, control insects and disease through silvicultural and biological practices. Chemical controls will be limited to high value areas or used on a broader scale only when all other measures have failed and other resource values can be protected. Emphasize cooperative control measures between Federal, State, and private landowners.	The standard applies and is met for the decision as the proposed silvicultural treatments address the mountain pine beetle infestation where it is present in treatment units. No chemical treatments are proposed. Refer to the Forested Vegetation specialist report.
3. Biological practices will be considered in controlling insect and disease infestations.	The standard does not apply. There are no feasible biological practices for the control of mountain pine beetle.
4. If possible, harvest stands which are a high risk for mountain pine beetle attack before harvesting moderate or low risk stands.	Proposed timber harvests addressed recently impacted and high risk stands as well as those where treatment was considered necessary to meet the purpose and need for the project.

Forestwide Protection - Wildfire Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. The appropriate suppression response(s) is discussed by management area. See Table I in appendix R of the Forest Plan, Fire Management, for suppression summaries.	Fire suppression strategies and tactics for all fire starts (appropriate management response) are based on firefighter and public safety, fire location, access, barriers to fire spread, threatened infrastructure, current and forecasted weather, available resources, vegetation conditions, and management area direction. This area is currently listed as a Fire Management Unit 1 within the Helena National Forest Fire Management Plan.
2. Locate timber sales, or cutting units within a sale, to break-up contiguous natural fuel.	The proposed mechanical and prescribed burn treatments will reduce existing surface fuel loading levels and break up contiguous vegetation to create landscape patterns that alter fire spread. Treated areas, in general, would provide places where firefighters can more safely and effectively perform suppression actions thereby limiting the potential for high-intensity fire to spread within the wildland-urban interface. Specifically, cutting units were located to reduce current and potential fuels created as a result of the mountain pine beetle epidemic and to modify fire behavior for community protection and allow for the reestablishment of fire as a natural process on the landscape.

Forestwide Protection - Law Enforcement Standards

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Law enforcement agreements will be maintained with cooperating counties.	Not applicable to the Stonewall Vegetation Project because this standard is outside the scope of activities being proposed.
2. Each Ranger District should maintain at least one employee qualified in advanced law enforcement (Level III).	Not applicable to the Stonewall Vegetation Project because this standard is outside the scope of activities being proposed.
3. Across the Forest, two full-range law enforcement positions (Level IV) should be maintained.	Not applicable to the Stonewall Vegetation Project because this standard is outside the scope of activities being proposed.

Forestwide Prescribed Fire
General Appendix R, Table I, for a summary of prescribed fire by management area.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. A burning schedule and specific objectives should be completed for each project.	This standard is met. A detailed silvicultural prescription will be completed for each treatment unit prior to implementation which will be carried through into the prescribed fire burn plan and prescribed fire parameters.
2. The burning prescription should be plant specific (i.e., burning may set back such species as bitterbrush and Idaho or rough fescue, if done with insufficient soil moisture or when "greening up").	This standard is met. A detailed silvicultural prescription will be completed for each treatment unit prior to implementation which will be carried through into the prescribed fire burn plan and prescribed fire parameters.
3. Prescribed burning should not exceed the natural fire frequency of the Fire Group.	This standard is met. Current the majority of the project area is within a moderate/high departure rating. Current proposed

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
	treatments prescribed burning would not exceed the natural fire frequency.
4. Use prescribed fire only during periods of adequate smoke dispersal and in areas where water quality can be adequately maintained.	This standard is met. Approval for implementation of the prescribed fire burn plan will be obtained through Montana/Idaho Airshed Management System, as well as having State and County permits in place prior to ignition. Specifically, this standard will be met with implementation of project design features (AIR-1 and 2).
5. The Helena National Forest Soil Survey will be used to assist with individual site selection, to avoid potential soil and/or watershed degradation.	This standard is met. For all planned broadcast burn units, field evaluations will be completed to determine detrimental soil disturbance from harvest activities. This site visit will determine the burn prescription specific to burn severity to soil. All prescriptions will be design to minimize detrimental soil disturbance and meet Regional Standards.
6. Smoke sensitive areas will be identified and burning prescriptions developed accordingly.	This standard is met. All Class I Airsheds and sensitive receptors have been identified within 60 kilometer radius around the project area and will be carried forward into the prescribed fire burn plans. Prior to ignition County Health Services for both Lewis & Clark and Powell Counties will be notified of predicted impact areas so they can notify sensitive receptors within the area. Specifically, this standard will be met with implementation of project design features (AIR-1 and 2).
7. The Montana Fish, Wildlife and Parks should be invited to participate in selecting treatment sites, executing burning plans, and monitoring and evaluating the overall program.	This standard will be met. Montana Department of Fish, Wildlife, and Parks will be on the burn plan list and asked to provide assistance in project monitoring.

Forestwide Prescribed Fire - Timber

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Where timber production is a primary land use, prescribed burning will only be applied where timber production can be maintained or enhanced by burning.	This standard is met. Prescribed fire is an accepted management tool on all management areas where it has been proposed. In timber production areas within this decision, burning after intermediate harvest or burning alone would remove surface fuels and smaller diameter trees to provide desired growing conditions for residual trees. Site preparation burning following regeneration harvests is designed to ensure rapid establishment of desirable regeneration. Refer to the Forested Vegetation Specialist report and the Fuels Specialist Report.
2. Prescribed fire, when used as a fuels management or site preparation technique after harvest, should be coordinated with the timber stand's silvicultural prescription.	All proposed prescribed fire activities with this decision are coordinated with harvest activities, and will follow development of a site-specific silvicultural prescription. Refer to the final environmental impact statement and Forested Vegetation Specialist Report.

Forestwide Prescribed Fire - Range and Wildlife

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Areas that have a demonstrated need to maintain or increase forage because of conifer encroachment, shrub invasion, and imbalance in forb/grass ratios, and/or where grass and shrubs are deteriorating should be recommended for prescribed burning.	This standard is met. No areas of conifer encroachment, shrub invasion or imbalance of forb/grass ratio were identified during field reconnaissance for the design of this project.
2. Where livestock and wildlife share sagebrush areas, prescribed fire will be designed to produce a mosaic of burned and unburned islands.	This standard is met. Prescribed fire is primarily focused in timber stands. Sagebrush is very limited in the project area. The prescription for any sagebrush stands with the prescribed fire units will have a low severity prescription.
3. Just prior to and following a prescribed burn on grassland, livestock use should be withheld to ensure that adequate fine fuels are available for burning and to prevent overuse of new growth.	This standard is met. Fuels and range will work together during the planning process of the prescribed fire to plan management in pre and post fire.

Forestwide Prescribed Fire – Riparian

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
1. Riparian areas will be delineated prior to implementing any management activities. Riparian areas include: a. Aquatic ecosystems (water, streambed, banks); b. Floodplains; c. Riparian ecosystems (area dominated by riparian vegetation); d. One hundred feet from edges of all perennial streams, lakes, and other water bodies, including a, b, and c above.	Standard is met. Field crews have conducted surveys throughout the project area and mapped aquatic ecosystems where they existed. Ignition buffers will be implemented and stream management zones and riparian habitat conservation areas regulations will be followed. Design features included in this decision are listed in appendix B of this record of decision and are included in the Assumptions section of the Fisheries and Hydrology reports.
2. Discourage concentrated use, such as campsites and roads, in riparian areas. Close wet meadows and wet areas to non-snow Over-Road Vehicles.	This standard will be met because the Stonewall Vegetation Project does not propose any concentrated use or further development of campsites and roads in riparian areas.
3. Identify, prioritize, and develop riparian area rehabilitation projects by watershed.	Not applicable to the Stonewall Vegetation project because this is not a riparian area rehabilitation project.
4. Roads should not be constructed in the riparian area except to cross them. Use the appropriate soil and water conservation practices to minimize sedimentation during instream construction activities and include them in road construction contracts.	Standard would be met. Proposed temporary roads are generally in upland locations that would likely not pose a risk of sediment delivery to streams. There are no proposed road/stream crossings associated with temporary roads. Best management practices will be in place to minimize impacts to riparian and fish bearing habitat. Specifically, this standard will be met by project design features (RDS-1, 8 and 10, S/WS/F – 19, 21, 22 and 25).
5. Assure that road construction in riparian areas is substantially completed or winterized during winter shut down to minimize peak flow sediment yield during spring thaw.	Standard will be met. No road construction will occur in riparian areas.
6. Generally, avoid lateral fills within normal high water marks.	This standard will be met. Lateral fills within normal high water marks are not expected as a result of the Stonewall Vegetation project.
7. Generally, avoid stream course encroachment and channelization.	This standard will be met. Stream course encroachment and channelization are not expected as a result of the Stonewall Vegetation project.
8. Use of chemicals within the riparian area will be minimized to the extent feasible; will be coordinated with wildlife, watershed, and fisheries personnel and a certified pesticide applicator.	This standard will be met. Each resource specialist provides guidance on the use of chemicals which includes the coordination with other resource staffs.
9. Riparian areas will be managed to be compatible with dependent wildlife species.	This standard will be met. The Aquatic Organisms and Wildlife reports for the Stonewall Vegetation Project provide analysis information on riparian dependent species. Additionally, the design criterion for the project is specific to tree removal within the riparian habitat conservation areas and stream management zones will be employed (S/SW/F – 16, 17 and 18).
10. The timing and type of machinery used in riparian areas should be planned to minimize site damage.	This standard will be met. The Hydrology specialist report includes a discussion of restrictions on equipment and activities in riparian areas developed in consultation with the silviculturalist specialist.
11. Provide vegetative cover adjacent to streams to serve as a filter strip for sediment and maintain optimum water temperatures, as well as provide large debris for long-term instream fish cover and pooling. Where vegetative manipulation is possible, the activities will strive to achieve a balance of age classes and desired species composition.	This standard will be met. Additionally, the design features for the project is specific to tree removal within the riparian areas. (S/SW/F – 16, 17 and 18).
12. Provide for stream crossing structure design that allows free water flow and fish passage.	This standard will be met by project design features (RDS-8 and 10, S/WS/F – 15 and 25).
13. Emphasize off-stream watering in range allotments to prevent damage to the riparian area.	Not applicable to the Stonewall Vegetation project because the project does not propose any changes to livestock watering methods.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
14. Livestock grazing in riparian areas will be controlled at the following levels of utilization: Vegetative Type / Grazing Systems / Vegetative Condition Class / Forage Utilization by Weight / Browse Utilization by percent of Leader Use Grasslands/ Grass-like/Forb: Continuous: Good 5 percent N.A.; Fair 5 percent N.A.; Poor 20 percent N.A. Rest-Rotation: Heavy Use Pasture 1/ 60 percent N.A.; Light Use Pasture 5 percent N.A. Defer-Rotation: Heavy Use Pasture 50 percent N.A.; Light Use Pasture 40 percent N.A. Willow/ Grass/ Grasslike and Willow/ Forest: Continuous: Good 55 percent 50 percent; Fair 5 percent 50 percent; Poor 5 percent 50 percent Rest-Rotation: Heavy Use Pasture 2/ 70 percent 50 percent; Light Use Pasture 50 percent 50 percent Defer-Rotation: Heavy Use Pasture 60 percent 50 percent; Light Use Pasture 5 percent 50 percent 1/ Trampled areas and streambank damage caused during heavy use year should be healed or stabilized with the following year. 2/ Disturbance on heavy use pasture should be stabilized or healed prior to use the following year.	Not applicable to the Stonewall Vegetation project because project proposals do not affect the levels at which livestock graze in riparian areas.

INFISH Standards Columbia River Basin

*These **Standards** apply to all riparian habitat conservation areas and to projects and activities in areas outside Riparian Conservation Habitat Areas that would degrade them.*

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
Timber Management	
TM-1 - Prohibit timber harvest, including fuel wood cutting, in riparian habitat conservation areas, except as described below. a. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuel wood cutting in riparian habitat conservation areas only where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other riparian management objectives, and where adverse effects can be avoided to inland native fish. For priority watersheds, complete watershed analysis prior to salvage cutting in riparian habitat conservation areas. b. Apply silvicultural practices for riparian habitat conservation areas to acquire desired vegetation characteristics where needed to attain riparian management objectives. Apply silvicultural practices in a manner that does not retard attainment of riparian	This standard is met. Fisheries Specialist Report including design features discusses restrictions on activities and equipment in riparian habitat conservation areas (S/WS/F – 16 and 17).

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
management objectives and that avoids adverse effects on inland native fish.	
Roads Management	
RF-I - Cooperate with Federal, Tribal, State, and county agencies, and cost-share partners to achieve consistency in road design, operation, and maintenance necessary to attain riparian management objectives.	This standard does not apply as no road management will be completed within riparian habitat conservation area and no riparian management objectives will change.
RF-2 - For each existing or planned road, meet the riparian management objectives and avoid adverse effects to inland native fish by: a. Completing watershed analysis prior to construction of now roads or landings in riparian habitat conservation areas within priority watersheds. b. Minimizing road and landing locations in riparian habitat conservation areas. c. Initiating development and implementation of a Road Management Plan or a Transportation Management Plan. At a minimum, address the following items in the plan: i. Road design criteria, elements, and standards that govern construction and reconstruction; ii. Road management objectives for each road; iii. Criteria that govern road operation, maintenance, and management; iv. Requirements for pre-, during-, and post-storm inspections and maintenance; v. Regulation of traffic during wet periods to minimize erosion and sediment delivery and accomplish other objectives; vi. Implementation and effectiveness monitoring plans for road stability, drainage, and erosion control; and vii. Mitigation plans for road failures. d. Avoiding sediment delivery to streams from the road surface. i. Out-sloping of the roadway surface is preferred, except in cases where out-sloping would increase sediment delivery to streams or where out-sloping is infeasible or unsafe; ii. Route road drainage away from potentially unstable stream channels, fills, and hillslopes. e. Avoiding disruption of natural hydrologic flow paths. f. Avoiding side-casting of soils or snow. Side-casting of road material is prohibited on road segments within or abutting riparian habitat conservation areas in priority watersheds.	This standard is met. Proposed temporary roads are generally in upland locations that would likely not pose a risk of sediment delivery to streams. There are no proposed road/stream crossings associated with temporary roads. Mitigation for this project includes reconstruction and ongoing road maintenance activities that will reduce sediment from existing levels. Best management practices will be in place to minimize impacts to any fish bearing habitat. No landings will be located in riparian habitat conservation areas. No snowplowing will be approved within the project area and road use during wet periods will be addressed with standard timber contract clauses.
RF-3 - Determine the influence of each road on the riparian management objectives. Meet riparian management objectives and avoid adverse effects on inland native fish by: a. Reconstructing road and drainage features that do not meet design criteria or operation and maintenance standards, or that have been shown to be less effective than designed for controlling sediment delivery, or that retard attainment of riparian management objectives, or does not protect priority watersheds from increased sedimentation. b. Prioritizing reconstruction based on the current and potential damage to inland native fish and their priority watersheds, the ecological value of the riparian resources affected, and the feasibility of options such as helicopter logging and road relocation out of riparian habitat conservation areas. c. Closing and stabilizing or obliterating, and stabilizing roads not needed for future management activities. Prioritize these actions based on the current and	This standard is met. Best management practices will be in place to minimize impacts to fish bearing habitat.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
potential damage to inland native fish in priority watersheds, and the ecological value of the riparian resources affected.	
RF-4 - Construct now, and improve existing, culverts, bridges, and other stream crossings to accommodate a 100-year flood, including associated bedload and debris, where those improvements would/do pose a substantial risk to riparian conditions. Substantial risk improvements include those that do not meet design and operation maintenance criteria, or that have been shown to be less effective than designed for controlling erosion, or that retard attainment of riparian management objectives, or that do not protect priority watersheds from increased sedimentation. Base priority for upgrading on risks in priority watersheds and the ecological value of the riparian resources affected. Construct and maintain crossings to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.	This standard is met. Best management practices will be in place to minimize impacts to fish bearing habitat.
RF-5 - Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.	This standard does not apply as no new crossings or improvements are proposed.
Grazing Management	
GM-1 - Modify grazing practices (e.g., accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of riparian management objectives or are likely to adversely affect inland native fish. Suspend grazing if adjusting practices is not effective in meeting riparian management objectives.	No grazing management is proposed in this project. Standard does not apply.
GM-2 - Locate new livestock handling and/or management facilities outside of riparian habitat conservation areas. For existing livestock handling facilities inside the riparian habitat conservation areas, assure that facilities do not prevent attainment of riparian management objectives. Relocate or close facilities where these objectives cannot be met.	No grazing management is proposed in this project. Standard does not apply.
GM-3 - Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that would not retard or prevent attainment of riparian management objectives or adversely affect inland naive fish.	No grazing management is proposed in this project. Standard does not apply.
GM-4 - Adjust wild horse and burro management to avoid impacts that prevent attainment of riparian management objectives or adversely affect inland native fish.	No grazing management is proposed in this project. Standard does not apply.
Recreation Management	
RM-1 - Design, construct, and operate recreation facilities, including trails and dispersed sites, in a manner that does not retard or prevent attainment of the riparian management objectives and avoids adverse effects on inland native fish. Complete watershed analysis prior to construction of now recreation facilities in riparian habitat conservation areas within priority watersheds. For existing recreation facilities inside riparian habitat conservation areas, assure that the facilities or use of the facilities would not prevent attainment of riparian management objectives or adversely affect inland native fish. Relocate or close recreation facilities where riparian management objectives cannot be met or adverse effects on inland native fish cannot be avoided.	This standard does not apply as no recreation management or facilities are proposed with this project nor will recreation activities occur within riparian habitat conservation area and no riparian management objectives change.
RM-2 - Adjust dispersed and developed recreation practices that retard or prevent attainment of riparian management objectives or adversely affect inland native fish. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective in meeting riparian management objectives and avoiding adverse effects on inland native fish, eliminate the practice or occupancy.	This standard does not apply as no recreation management or facilities are proposed with this project nor will recreation activities occur within riparian habitat conservation area and no riparian management objectives change.
RM-3 - Address attainment of riparian management objectives and potential effect on inland native fish in Wild and Scenic Rivers, Wilderness, and other Recreation Management plans.	This standard does not apply as no Wild and Scenic Rivers, Wilderness, and other Recreation Management plans are proposed with this project nor will recreation activities occur within riparian habitat conservation area and no riparian management objectives change.
Minerals Management	
MM-1 - Avoid adverse effects to inland native fish species habitat from mineral operations. If the Notice of Intent indicates	No mineral or mining management is proposed in this project. Standard does not apply.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
a mineral operation would be located in a riparian habitat conservation area, or could affect attainment of riparian management objectives, or adversely affect inland native fish, require a reclamation plan, approved Plan of Operations (or other such governing document), and reclamation bond. For effects that cannot be avoided, such plans and bonds must address the costs of removing facilities, equipment, and materials; re-contouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil, and seedbed preparation and revegetation to attain riparian management objectives and avoid adverse effects on inland native fish. Ensure reclamation plans contain measurable attainment and bond release criteria for each reclamation activity.	
MM-2 - Locate structures, support facilities, and roads outside riparian habitat conservation areas. Where no alternative to siting facilities in riparian habitat conservation areas exists, locate and construct the facilities in ways that avoid impacts to riparian habitat conservation areas and streams and adverse effects on inland native fish. Where no alternative to road construction exists, keep roads to the minimum necessary for the approved mineral activity. Close, obliterate and revegetate roads no longer required for mineral or land management activities.	No mineral or mining management is proposed in this project. Standard does not apply.
MM-3 - Prohibit solid and sanitary waste facilities in riparian habitat conservation areas. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in riparian habitat conservation areas exists and releases can be prevented and stability can be ensured, then: a. Analyzes the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics; b. Locates and designs the waste facilities using the best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in riparian habitat conservation areas; c. Monitor waste and waste facilities to confirm predictions of chemical and physical stability, and make adjustments to operations as needed to avoid adverse effects to inland native fish and to attain riparian management objectives; d. Reclaims and monitors waste facilities to assure chemical and physical stability and revegetation to avoid adverse effects to inland native fish, and to attain the riparian management objectives; and e. Require reclamation bonds adequate to ensure long-term chemical and physical stability and successful revegetation of mine waste facilities.	No mineral or mining management is proposed in this project. Standard does not apply.
MM-4 - For leasable minerals, prohibit surface occupancy within riparian habitat conservation areas for oil, gas, and geothermal exploration and development activities where contracts and leases do not already exist, unless there are no other options for location and riparian management objectives can be attained and adverse effects to inland native fish can be avoided. Adjust the operating plans of existing contracts to (1) eliminate impacts that prevent attainment of riparian management objectives and (2) avoid adverse effects to inland native fish.	No mineral or mining management is proposed in this project. Standard does not apply.
MM-5 - Permit sand and gravel mining and extraction within riparian habitat conservation areas only if no alternatives exist, if the action(s) would not retard or prevent attainment of riparian management objectives, and adverse effects to inland native fish can be avoided.	No mineral or mining management is proposed in this project. Standard does not apply.
MM-6 - Develop inspection, monitoring, and reporting requirements for mineral activities. Evaluate and apply the results of inspection and monitoring to modify mineral plans, leases, or permits as needed to eliminate impacts that prevent attainment of riparian management objectives and avoid adverse effects on inland native fish.	No mineral or mining management is proposed in this project. Standard does not apply.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
Fire/Fuels Management	
FM-1 - Design fuel treatment and fire suppression strategies, practices, and actions so as not to prevent attainment of riparian management objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could perpetuate or be damaging to long-term ecosystem function or inland native fish.	This standard will be met with project design features S/WS/F – 16 and 17.
FM-2 - Locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of riparian habitat conservation areas. It the only suitable location for such activities is within the riparian habitat conservation area, an exemption may be granted following a review and recommendation by a resource advisor. The advisor would prescribe the location, use conditions, and rehabilitation requirements, with avoidance of adverse effects to inland native fish a primary goal. Use an interdisciplinary team, including a fishery biologist to predetermine incident base and helibase locations during pre-suppression planning.	These facilities do not occur in the project area. Standard does not apply.
FM-3 - Avoid delivery of chemical retardant, foam, or additives to surface waters. An exception maybe warranted in situations where overriding immediate safety imperatives exist, or, following a review and recommendation by a resource advisor and a fishery biologist, when the action agency determines an escape fire would cause more long-term damage to fish habitats than chemical delivery to surface water.	This standard will be met with project design features S/WS/F – 16 and 17.
FM-4 - Design prescribed burn projects and prescriptions to contribute to the attainment of the riparian management objectives.	This standard will be met with project design features S/WS/F – 16 and 17.
FM-5 - Immediately establish an emergency team to develop a rehabilitation treatment plan to attain riparian management objectives and avoid adverse effects on inland native fish whenever riparian habitat conservation areas are significantly damaged by a wildfire or a prescribed fire burning out of prescription.	These activities are not planned for this project. Standard does not apply.
Lands	
LH-1 - Require instream flows and habitat conditions for hydroelectric and other surface water development proposals that maintain or restore riparian resources, favorable channel conditions, and fish passage, reproduction, and growth. Coordinate this process with the appropriate State agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission that require fish passage and flows and habitat conditions that maintain/restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate State agencies.	These facilities do not occur in the project area. Standard does not apply.
LH-2 - Locate new hydroelectric ancillary facilities outside riparian habitat conservation areas. For existing ancillary facilities inside the riparian habitat conservation area that are essential to proper management, provide recommendations to Federal Energy Regulatory Commission to assure that the facilities would not prevent attainment of the riparian management objectives and that adverse effects on inland native fish are avoided. Where these objectives cannot be met, provide recommendations to Federal Energy Regulatory Commission that such ancillary facilities should be relocated. Locate, operate, and maintain hydroelectric facilities that must be located in riparian habitat conservation areas to avoid effects that would retard or prevent attainment of the riparian management objectives and avoid adverse effects on inland native fish.	These facilities do not occur in the project area. Standard does not apply.
LH-3 - Issue leases, permits, rights-of-way, and easements to avoid effects that would retard or prevent attainment of the riparian management objectives and avoid adverse effects on inland native fish. Where the authority to do so was retained, adjust existing leases, permits, rights-of-way, and easements to eliminate effects that would retard or prevent attainment of the riparian management objectives or adversely affect inland native	Special use permit management is not part of this project. Standard does not apply.

Standards	If Standard applies, how is standard being met, and where in the project file is the documentation?
fish. If adjustments are not effective, eliminate the activity. Where the authority to adjust was not retained, negotiate to make changes in existing leases, permits, rights-of-way, and easements to eliminate effects that would prevent attainment of the riparian management objectives or adversely affect inland native fish. Priority for modifying existing leases, permits, rights-of-way, and easements would be based on the current and potential adverse effects on inland native fish and the ecological value of the riparian resources affected.	
LH-4 - Use land acquisition, exchange, and conservation easements to meet riparian management objectives and facilitate restoration of fish stocks and other species al risk of extinction.	Not applicable to this project.
General Riparian Area Management	
RA-1 - Identify and cooperate with Federal, Tribal State and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.	Not applicable to this project.
RA-2 - Trees may be felled riparian habitat conservation areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives.	This standard will be met with project design features S/WS/F – 16 and 17.
RA-3 - Apply herbicides, pesticides, and other toxicants, and other chemicals in a manner that does not retard or prevent attainment of riparian management objectives and avoids adverse effects on inland native fish.	This standard will be met with project design feature NOX-1.
RA-4 - Prohibit storage of fuel and other toxicants within riparian habitat conservation areas. Prohibit refueling within riparian habitat conservation areas unless there are no other alternatives. Refueling sites within a riparian habitat conservation area must be approved by the Forest Service or Bureau of Land Management and have an approved spill containment plan.	This standard will be met with project design features S/WS/F – 16 and 17 and timber sale contract.
RA-5 - Locate water drafting sites to avoid adverse effects to inland native fish and instream flows, and in a manner that does not retard or prevent attainment of riparian management objectives.	This standard will be met with project design features RDS-1, S/WS/F – 16 and 17 and timber sale contract.
Watershed and Habitat Restoration	
WR-1 - Design and implement watershed restoration projects in a manner that promotes the long-term ecological integrity or ecosystems, conserves the genetic integrity of native species, and contributes to attainment of riparian management objectives.	There are no watershed restoration activities in this project. This standard is not applicable to this project.
WR-2 - Cooperate with Federal, State, local, and Tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans (CRMPS) or other cooperative agreements to meet riparian management objectives.	There are no Coordinated Resource Management Plans or other cooperative agreements in this project. This standard is not applicable to this project.
Fisheries and Wildlife Restoration	
FW-1 - Design and implement fish and wildlife habitat restoration and enhancement actions in a manner that contributes to attainment of the riparian management objectives.	This standard will be met with project design features S/WS/F – 16 and 17.
FW-2 - Design, construct, and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of the riparian management objectives or adversely affect inland naive fish. For existing fish and wildlife interpretive and other user-enhancement facilities inside riparian habitat conservation areas, assure that riparian management objectives are met and adverse effects on inland native fish are avoided. Where riparian management objectives cannot be met or adverse effects on inland native fish avoided, relocate or close such facilities.	There are no fish and wildlife interpretive and other user-enhancement activities proposed by this project. This standard is not applicable to this project.
FW-3 - Cooperate with Federal, Tribal, and State wildlife management agencies to identify and eliminate wild ungulate impacts that prevent attainment of the riparian management objectives or adversely affect inland native fish.	Cooperation is ongoing. Meetings and consultation with other Federal, Tribal, and State wildlife management agencies are scheduled on a regular basis.
FW-4 - Cooperate with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.	Cooperation is ongoing. Meetings and consultation with other Federal, Tribal, and State wildlife management agencies are scheduled on a regular basis.

INFISH Standards
Timber Management

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
TM-1 - Prohibit timber harvest, including fuel wood cutting, in riparian habitat conservation areas, except as described below: a. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuel wood cutting in riparian habitat conservation areas only where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other riparian management objectives, and where adverse effects can be avoided to inland native fish. For priority watersheds, complete watershed analysis prior to salvage cutting in riparian habitat conservation areas. b. Apply silvicultural practices for riparian habitat conservation areas to acquire desired vegetation characteristics where needed to attain riparian management objectives. Apply silvicultural practices in a manner that does not retard attainment of riparian management objectives and that avoids adverse effects on inland native fish.	This standard will be met with project design features S/WS/F – 16 and 17.

Management Area M-1
183,500 ACRES

Description:
These areas are non-forest and forested land where timber management and range or wildlife habitat improvements are currently uneconomical or environmentally infeasible. The area is scattered throughout the Forest and is found at all elevations and slopes ranging from 10 percent to over 60 percent. The parcels range in size from 20 to 500 acres.

Management Goal:
Maintain the present condition with minimal investment for resource activities, while protecting the basic soil, water, and wildlife resources.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Dispersed recreation can be supported by constructing trails, trailhead facilities, and sanitation facilities.	Standard not applicable because the Stonewall Vegetation project does not propose the construction of trails, facilities and sanitation facilities.
Visual - Because of the lack of activity, the general visual quality objective is retention. Less restrictive visual quality objectives may be considered on a case-by-case basis, if project level planning on an adjacent management area affects an M-1 management area. [See Forest Landscape Management Book, Volume 2 (Ag. Hdbk. No. 462) for definitions of visual quality objectives and how they are applied.]	This standard is met. The potential direct, indirect, and cumulative effects of the proposed activities to visual resources are consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objectives to be achieved. Also, Intermediate harvest and prescribed fire prescriptions are appropriate to use within this management area for the enhancement and maintenance of resources.
Wildlife and Fisheries - Management practices to maintain or improve wildlife habitat will be permitted where necessary to meet the objectives of adjacent management areas.	Management areas adjacent to M-1 are T-1, T-2, T-3, T-4, and W-1. Prescribed fire is the primary treatments in M-1 along with a minor amount of intermediate harvest. The prescribed fire in M-1 does promote wildlife habitat in the long-term. The Decision is consistent with this standard.
Range - Livestock use may remain at the 1983 level if the area is within existing allotments. Maintain range improvements and build new improvements, if they are needed to facilitate management of adjacent areas.	This standard does not apply to this project. No range allotment management is proposed in this project.
Timber - Timber harvest, such as salvage and firewood removal, may occur where access exists. Slash created by any management practice will be disposed of in a manner consistent with the management area goals. Forested lands are classified as unsuitable for timber management.	Minimal removal of dead trees occurs within M-1 management area. Firewood removal and slash disposal will be consistent with management area direction and this standard will be met by applying project design features FUEL – 1 to 8.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Facilities - Roads will be allowed for special uses, mineral development, or to provide access to other management areas, consistent with protection of soil and water values. Roads may be opened or closed, depending on the objectives of the adjacent management areas. - Existing roads and trails will be maintained as needed.	This standard is met. Existing roads will be maintained or reconstructed for implementation as part of this draft decision.
Minerals – See Forest Plan Amendment #13 for lease Standards.	This standard does not apply to this project. No minerals management is proposed in this project.
Protection - Salvage of dead, dying, or high-hazard trees is permitted to prevent disease and insect population build-up. - The appropriate fire suppression response ranges from control to confinement depending upon location, expected fire behavior, and other decision criteria related to values at risk. These criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources. - Prescribed fire with unplanned ignitions may be used in this management area, for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. These criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Evaluate areas periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on watershed and other resource values.	This standard applies and is met. Part of the purpose and need for this project includes salvage of insect-killed trees, establishing desirable regeneration, and improving forest health to be more resistant and resilient to bark beetle activity in the future. Insect-killed and currently infested trees are proposed for removal in harvest units with this decision.

Management Area T-1
156,000 ACRES

Description:

This management area consists of lands available and suitable for timber management with varying physical and biological environments as determined by soil, slope, aspect, elevation, and climatic factors. Vegetation varies from ponderosa pine on the drier sites to spruce in the more mesic sites with nearly all slopes and aspects represented. Although this area consists primarily of suitable forest land, there are inclusions of non-forest and nonproductive forest lands. This area includes some small ponds and marshes which are considered unique to this part of Montana.

Management Goals:

Provide healthy timber stands and optimize timber growing potential over the planning horizon.
Emphasize cost-effective timber production, while protecting the soil productivity.
Maintain water quality and streambank stability.
Provide for dispersed recreation opportunities, wildlife habitat, and livestock use, when consistent with the timber management goals.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Motorized and non-motorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained unless they are no longer needed. - Controls on motorized recreation will be implemented where necessary, to protect the vegetation, soil, and water resources and to prevent road damage.	This standard is met. Motorized and non-motorized dispersed recreation activities will still be permitted with this project. However, short term traffic delays and limited access to parts of the project are maybe needed for safety during project implementation. Specifically, this standard will be met by project design features (REC-1 to 4).
Visual - Management practices will generally follow guidelines for the maximum modification visual quality objective. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in appendix B of the Forest Plan will be managed to meet more restrictive visual quality objectives noted in the appendix. [See Forest Management Book, Vol. 2 (Ag. Handbook, No. 462) for definitions of visual quality objectives and how they are applied.]	This standard is met. The potential direct, indirect, and cumulative effects of the proposed activities to visual resources will be consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objectives to be achieved.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
	Specifically, this standard will be met by project design features (VIS-1 to 13) See appendix B of this record of decision, project file.
Wildlife and Fisheries - Wildlife and fisheries habitat improvement projects may be implemented, provided they are compatible with the management area goals. - Forestwide Standards and appendix D of the Forest Plan contain guidance for threatened and endangered species habitat.	This standard is met. Wildlife and fisheries habitat improvements as a result of proposed treatments in this management area have been identified. Refer to the Wildlife and Aquatic Specifies Specialist Reports. Refer to the threatened and endangered section under Forestwide standards for more information.
Range - Livestock grazing is compatible, except where it conflicts with stand establishment. Fencing, temporary herding, or other techniques may be used to protect regeneration where needed. - Pasture and allotment boundaries should be maintained during and following timber harvest. This may require additional fencing, where natural barriers are breached by timber sale activities. - Livestock grazing will be maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.	This standard will be met by project design features (RNG-1 to 3).
Timber - This management area is suitable for timber management activities. - Timber harvest practices include clearcut, group selection, and shelterwood harvest, depending on habitat group, physical site conditions, and silvicultural objectives. Pre-commercial thinning and intermediate harvest may occur where needed as determined by silvicultural objectives and project planning. (Appendices H and M of the Forest Plan provide broad guidelines for various habitat groups.). - As a minimum, a cutover area will not be considered an opening when: (1) a new forest stand is established and certified as stocked, and (2) vegetative conditions reach the point where harvest of additional timber can occur and the combined area can still meet watershed management objectives. - Prescribed burning or other techniques may be used for slash disposal, site preparation, silvicultural, and livestock objectives. In habitat groups where fire is not a useful treatment tool, lopping and scattering, yarding un-merchantable material, or other methods will be used to reduce fuel accumulations and prepare sites for regeneration. - Project level planning will provide for stand regeneration within five years of final harvest. - Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, management for experimental or research purposes and to meet other resource objectives. Culmination of mean annual increment for primary species on the Helena National Forest is shown in appendix H of the Forest Plan.	The standard is met. Timber management activities will occur within this management area for this along with prescribed burning for slash disposal and natural regeneration which will be assured within five years of final harvest. The stands where final regeneration harvest were likely at or very near CMAI (culmination of mean annual increment); and regardless have now been killed by the mountain pine beetle and therefore can be considered in a salvage condition. Refer to the final environmental impact statement and Forested Vegetation Specialist Report. In addition, this standard will be met by project design features (SILV-1 to 5).
Water and Soils - Timber harvest will not create runoff increases which are likely to result in long term stream channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality, and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a proposal shows the water quality cannot be maintained, the project will be reevaluated or terminated.	This standard is met. An analysis has been completed and is documented in the final environmental impact statement, Hydrology Specialist Report and associated project record. In addition, design features have been included for project implementation and will be applied when necessary. Appendix B of this record of decision.
Minerals – Leasable See Forest Plan Amendment #13 for lease Standards	Locatable - See Forestwide standards and Forest Plan Consistency, Minerals General and Locatable Minerals sections. Leasable - Not applicable to the Stonewall Project as no current oil and gas leases exist within the project vicinity.
Facilities - Roads will be constructed as needed to meet the management objectives of the area.	This standard is met. New temporary road construction is proposed as part of this decision to access vegetation treatment units. New temporary roads will be closed and rehabilitated after use.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.	
Protection - Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times. - The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision logic criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources. - Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling.	This standard is met. Proposed harvest will respond to insect-caused mortality and lower the hazard of future insect problems within treatment units. Prescribed fire will be used to reduce natural fuels. Refer to the final environmental impact statement, Forested Vegetation Specialist Report and Fuels Specialist Report.
Riparian - Generally, harvesting will only occur in riparian areas in conjunction with sale activity on adjacent lands. - In riparian areas, any timber harvest should be on a 240 year rotation, and harvest types should be selection or group selection. - The small ponds and marshes in Section 15, 16, 21, and 22 of T8N, R6W PMM are unique to this part of Montana and will be protected in project design and implementation.	Included in Forestwide Standards

Management Area T-2
7,500 ACRES

Description:

This management area occurs where big game winter range and timber values are present. Most of the area is in the lower elevations, below 6,000 feet. Vegetation varies from ponderosa pine on the dry south aspects to spruce in the riparian portions of the management area. Although this area consists primarily of forested lands, there are inclusions of grassland interspersed throughout.

Management Goals:

Provide for the maintenance and enhancement of big game winter range.
Harvest timber on a programmed basis, consistent with big game winter range values.
Emphasize cost-effective timber production, while protecting the soil productivity.
Maintain water quality and streambank stability.
Provide for other resource uses as long as these uses are compatible with timber and big game winter range management goals.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Motorized and non-motorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. Existing trails and facilities will be maintained unless they are no longer needed. - Controls over motorized recreation will be implemented from December 1 to May 15, where necessary, to protect the vegetation, soil, water, and wildlife resources and prevent damage to roads.	This standard is met. Motorized and non-motorized dispersed recreation activities will still be permitted with this project. However, short term traffic delays and limited access to parts of the project are maybe needed for safety during project implementation. Specifically, this standard will be met by project design features (REC-1 to 4).
Visual - Management practices will generally follow guidelines for the modification visual quality objective. The portions of this area (if any) that are within sensitive viewing areas of the roads, trails, and areas listed in appendix B will be managed to meet the more restrictive visual quality objectives noted in the appendix. [See Forest Landscape Management Book, Volume 2 (Ag. Hdbk. No. 462) for definitions of visual quality objectives and how they are applied.]	This standard is met. The potential direct, indirect, and cumulative effects of the proposed activities to visual resources will be consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objectives to be achieved. Specifically, this standard will be met by project design features (VIS-1 to 13) appendix B of this record of decision.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Wildlife and Fish - Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, may be used to maintain and/or enhance the quality of big game winter habitat. - Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent thermal cover, on identified winter range.	Management Area T-2 Standards (Forest Plan pp. III/34-37) "*Maintain adequate thermal cover and hiding cover adjacent to forage areas. Generally this means providing 25 percent thermal cover on identified winter range*." Thermal cover in T-2 on winter range in the project area is reduced in the Decision from 251 acres (neither the Sucker Creek nor Klondike Fire burned in T-2) to 145 acres (16 percent to 9 percent). The Decision is inconsistent with this standard. This situation is addressed in the site-specific Forest Plan amendment. "*Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested*." Several treatment units in the Decision are adjacent to openings created by past timber harvest that currently do not provide hiding cover. This situation is addressed in the site-specific Forest Plan amendment. "Schedule sale activities outside the winter periods (December 1 to May 15)." Winter logging is not scheduled in elk winter range during the winter period; therefore the Decision is consistent with standard. "*No more than 25 percent of the timber-perimeter around natural or artificial parks should be non-thermal cover at one time*." There are no natural or artificial parks in T-2 so this standard is not applicable.
Range - Livestock grazing will generally be maintained at the 1983 levels in existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change. - Grazing systems will be designed to be compatible with wildlife needs. - Improvements for livestock management, such as fencing and water developments, will be designed in cooperation with a wildlife biologist. - Pasture and allotment boundaries should be maintained during and following timber harvest. This may require additional fencing where natural barriers are breached by timber sale activity. - Chemical or mechanical control of invading vegetation will be considered in this area only if needed to maintain or improve big game winter range values.	This standard will be met by project design features (RNG-1 to 3).
Timber - This management area is suitable for timber management activities. - Timber harvest methods and volumes will be adjusted as necessary to meet big game winter range needs. Even- or uneven-aged silvicultural systems may be used. (appendix M of the Forest Plan provides guidance for vegetative management practices by habitat groups). - Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested. - Schedule sale activities outside winter periods (December 1 to May 15). - No more than 25 percent of the timber-perimeter around natural or artificial parks should be non-thermal cover at one time. - Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, and management for experimental or research purposes and to meet other resource objectives. Culmination of mean annual increment for primary species on the Helena National Forest is shown in appendix H of the Forest Plan.	Management Area T-2 Standards (Forest Plan pp. III/34-37) "*Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested*." Several treatment units in the Decision are adjacent to openings created by past timber harvest that currently do not provide hiding cover. This situation is addressed in the site-specific Forest Plan amendment. "*Schedule sale activities outside the winter periods (December 1 to May 15)*." Winter logging is not scheduled in elk winter range during the winter period; therefore the Decision is consistent with standard. "*No more than 25 percent of the timber-perimeter around natural or artificial parks should be non-thermal cover at one time*." There are no natural or artificial parks in T-2 so this standard is not applicable.
Water and Soils - Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a	This standard will be met by project design features (S/WS/F-1 to 26).

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
proposal shows the water quality cannot be maintained, the project will be reevaluated or terminated.	
Minerals – Locatable - To the extent feasible, timing of mineral activities will be coordinated with the needs of wildlife on winter range. This generally will require negotiations during development of operating plans for no surface occupancy from December 1 to May 15. - Leasable—See Forest Plan Amendment #13 for lease Standards	This standard does not apply to this project. No minerals management is proposed in this project.
Facilities - Roads may be constructed as needed to meet the management area goals. - Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.	This standard does not apply to this project. No facility management is proposed in this project.
Protection - Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times. - The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources. - Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives.	This standard is met. Proposed harvest will respond to insect-caused mortality and lower the hazard of future insect problems within treatment units. Prescribed fire will be used to reduce natural fuels. Refer to the final environmental impact statement, Forested Vegetation Specialist Report and Fuels Specialist Report.
Riparian - Generally, harvesting will only occur in riparian areas if in conjunction with large sale activity on adjacent lands. - In riparian areas, any timber harvest should be on a 240 rotation, and harvest types should be selection or group selection.	Included in Forestwide Standards

Management Area T-3
37,700 ACRES

Description:

This management area consists of lands that have primary forage, resting, and security characteristics that provide important spring and summer requirements for all big game species. These lands also supply the habitat needs of a wide variety of nongame forest dwelling wildlife. In addition lands within this management area contain productive timber sites that are available and suitable for timber management. The variation in elevation, topography, slope, and aspect, in addition to the often abundant surface water (seeps, springs, etc.); make these areas rich in species diversity and total numbers within species groups. This area also has inclusions of small grassland parks.

Management Goals:

Maintain and/or enhance habitat characteristics favored by elk and other big game species.
Provide for healthy timber stands and a timber harvest program compatible with wildlife habitat goals for this area.
Emphasize cost-effective timber production, while protecting the soil productivity.
Maintain water quality and streambank stability.
Provide for other resource objectives where compatible with the big game summer range and timber goals.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Controls over motorized dispersed recreation will be implemented where necessary to protect wildlife habitat values. - Non-motorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with management area goals.	There are no recreation facilities activities proposed by this project in these areas or riparian habitat conservation areas. Standard does not apply.
Visual - Management practices will generally follow guidelines for the modification visual quality objective. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in appendix B will be managed to meet the more restrictive visual quality objectives noted in the	This standard is met. The potential direct, indirect, and cumulative effects of the proposed activities to visual resources will be consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
appendix. [See Forest Landscape Management Book, Volume 2 (Ag. Hdbk. No. 462) for definitions of visual quality objectives and how they are applied].	system will allow a longer period of time for the retention visual quality objectives to be achieved. Specifically, this standard will be met by project design features (VIS-1 to 13), appendix B of this record of decision.
Wildlife and Fisheries - Maintain a minimum of 35 percent hiding cover for big game. - Maintain thermal cover adjacent to forage areas. Appendix C of the Forest Plan provides guidance for thermal cover. - Wildlife habitat improvement practices, including road management, prescribed fire, and timber harvest, may be used to maintain and/or enhance the quality of big game summer habitat.	Management Area T-3 Standards (Forest Plan pp. III/38-41): *"Wildlife habitat improvement practices, including road management, prescribed fire and other techniques, may be used to maintain and/or enhance the quality of big game summer habitat."* The Decision is consistent with this standard as new roads will be closed to public use and decommissioned following implementation; and, prescribed fire will improve forage palatability and production in big game summer ranges. *"Maintain* [50] *percent hiding cover* [Montana Department of Fish, Wildlife, and Parks definition] *for big game."* Hiding cover in the Decision in T-3 is reduced from 5,519 acres to 4,517 acres (91 percent to 80 percent). The Decision is consistent with this standard. *"Maintain thermal cover adjacent to forage areas."* Thermal cover is currently adjacent to forage areas and although it is slightly reduced through the Decision, forage areas will continue to be ringed by thermal cover. The Decision therefore is consistent with this standard.
Range - Livestock grazing will be maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis show a need or opportunity to change. - Grazing systems will be designed to be compatible with wildlife needs. - Improvements for livestock management, such as fencing and water developments, will be implemented unless they are a detriment to big game.	This standard will be met by project design features (RNG-1 to 3).
Timber - This management area is suitable for timber management activities. - Timber harvest methods and volumes may be modified as necessary to achieve the management area goals. - Even-aged stands will be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment of growth. Exceptions include salvage or sanitation harvest and management for experimental or research purposes and to meet other resource objectives. Culmination of mean annual increment for primary species on the Helena National Forest is shown in appendix H of the Forest Plan. Appendix M of the Forest Plan provides guidance for various vegetative management practices by habitat group. - Stocking control may be maintained through pre-commercial and commercial thinning. The timing and planning of thinning operations will be coordinated with a wildlife biologist. - Vegetative diversity will be encouraged. - Openings created by timber harvest will be reforested to the extent necessary to meet the hiding cover requirements of big game before harvesting adjacent areas.	"*Openings created by timber harvest should meet hiding cover requirements of big game before adjacent areas can be harvested*." Several treatment units in the Decision are adjacent to openings created by past timber harvest that currently do not provide hiding cover. This situation is addressed in the site-specific Forest Plan amendment.
Water and Soils - Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a project proposal shows the water quality cannot be maintained, the project will be reevaluated or terminated.	This standard will be met by project design features (S/WS/F-1 to 26).
Minerals – Locatable - To the extent feasible, timing of activities will be coordinated with the needs of wildlife on summer range. This will require negotiations during development of operating plans for minimum disturbance to wildlife. - Leasable - See Forest Plan Amendment #13 for lease Standards	This standard does not apply to this project. No minerals management is proposed in this project.
Facilities - Roads will be constructed as needed to meet the management area goals.	This standard does not apply to this project. No facility management is proposed in this project.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
- Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.	
Protection - Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times. - The appropriate fire suppression response ranges from control to containment depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire with planned ignitions may be used in this management area, for the enhancement and maintenance of resources. - Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives.	This standard is met. Proposed harvest will respond to insect-caused mortality and lower the hazard of future insect problems within treatment units. Prescribed fire will be used to reduce natural fuels. Refer to the final environmental impact statement, Forested Vegetation Specialist Report and Fuels Specialist Report.
Riparian - See Forest Wide Standards for grazing in riparian. - Generally, harvesting will only occur in riparian areas if in conjunction with sale activity on adjacent lands. - In riparian areas, any timber harvest should be on a 240 year rotation and harvest types should be selection or group selection.	Included in Forestwide standards.

Management Area T-4

10,100 ACRES

Description:

This management area is productive timberland within the sensitive viewing area of many major travel routes, use areas, and water bodies. Vegetation varies from ponderosa pine, on the drier sites, to spruce in the moistest areas. Nearly all slopes and aspects are represented. Most of the area is suitable forest land, but there are some inclusions of non-forest and nonproductive forest land.

Management Goals:

Maintain healthy stands of timber within the visual quality objective of retention and partial retention.
Provide for other resource uses as long as they are compatible with visual quality objectives.
Emphasize cost-effective timber production, while protecting the soil productivity.
Maintain water quality and streambank stability.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Motorized and non-motorized dispersed recreation activities are permitted and may be supported by constructing or maintaining trails and trailhead facilities. - Controls over motorized recreation will be implemented where necessary to protect resource values such as vegetation, soil, water, and visual quality objectives.	There are no recreation facilities activities proposed by this project in these areas or riparian habitat conservation areas. Standard does not apply.
Visual - Management practices will generally follow guidelines for partial retention and retention depending upon the particular portion of the management area being entered. (Refer to appendix B of the Forest Plan, Sensitive Viewing Areas, for most heavily used roads and recreation areas). Departures from these visual quality objectives will be considered on a case-by-case basis after an environmental analysis has been completed. [See Forest Landscape Book, Volume 2 (Ag. Hdbk. No. 462) for definitions of visual quality objectives and how they are applied].	The potential direct, indirect, and cumulative effects of the proposed activities to visual resources will be consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objectives to be achieved.
Wildlife and Fisheries - Where elk habitat exists, project design will incorporate management practices to maintain or enhance summer and winter habitat, to the extent that the visual quality objectives for the area are met. - Wildlife and fisheries habitat improvement projects may be implemented provided they are compatible with the management area goals.	This standard is met. The Decision is consistent with this standard as new roads will be closed to public use and decommissioned following implementation; and, prescribed fire will improve forage palatability and production in big game summer ranges.
Range - Pasture and allotment boundaries should be maintained during and following timber harvest. This may require additional	This standard will be met by project design features (RNG-1 to 3).

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
fencing where natural barriers are breached by timber sale activities. - Livestock grazing will be maintained at the 1983 levels within existing allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.	
Timber - This management area is suitable for timber management activities. - Even-aged stands may be scheduled for final regeneration harvest when they generally have reached the culmination of mean annual increment of growth. Exceptions include thinning or other stand improvement measures, salvage or sanitation harvest, and management for experimental or research purposes and to meet other resource objectives. Culmination of mean annual increment for primary species on the Helena National Forest is shown in appendix H of the Forest Plan. - Timber harvest practices include clearcutting, group selection, and shelterwood harvest, depending on habitat group, physical site conditions, and visual quality objectives. Pre-commercial thinning and intermediate harvest will occur where needed as determined by silvicultural objectives, project planning, and visual quality objective. (Appendices H and M of the Forest Plan provide broad guidelines for various habitat groups). - Openings created by timber harvest will be reforested to the point where harvest of adjacent timber can occur and the combined area can still meet the visual quality objectives of the area. - Use timber harvest to rehabilitate existing harvest units, to improve the visual quality objective. - Prescribed burning will be used to accomplish slash disposal, site preparation, and silvicultural objectives. In habitat groups where fire is not a useful treatment tool, loping and scattering, yarding un-merchantable material, or other methods will be used to reduce fuel accumulations and prepare sites for regeneration provided the area goals are met.	This standard will be met by project design features (SILV-1 to 5) See appendix B of this record of decision and the project file.
Water and Soils - Timber harvest will not create runoff increases which are likely to result in long term channel degradation. All timber sale proposals will include an analysis of the current and projected status of sediment produced. The project proposal will analyze and evaluate the potential water quantity and quality and soil productivity impacts; mitigation measures should be developed to minimize adverse effects. If a project proposal shows the water quality cannot be maintained, the project will be reevaluated or terminated.	This standard will be met by project design features (S/WS/F-1 to 26).
Minerals – Locatable - Plans of operation will include measures to maintain the visual quality objective of the area. - Leasable—See Forest Plan Amendment #13 for lease Standards	This standard does not apply to this project. No minerals management is proposed in this project.
Facilities - Roads will be constructed as needed to meet the management objectives of the area. - Where existing trails are intersected by new road construction, the trail will be evaluated to determine if it should be retained on the system or abandoned.	This standard does not apply to this project. No facility management is proposed in this project.
Protection - Insect and disease control should emphasize reduction and prevention through timber harvest and timber stand improvement. The use of other approved integrated pest management techniques may be necessary at times. - Aggressive control will normally be the appropriate fire suppression response in this management area. - Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources. - Fuel reduction methods for activity created fuels include burning, removing residue, or rearranging, such as dozer trampling. Disposal activities will meet visual quality objectives. - Wildfires will be suppressed in a manner that minimizes the use of heavy equipment.	This standard will be met by project design features (FUEL-1 to 8). See appendix B of this record of decision and the project file.
Riparian - See Forestwide standards for grazing in riparian. - Generally, harvesting will only occur in riparian areas in conjunction with large sale activity on adjacent lands.	This standard is met. Proposed harvest will respond to insect-caused mortality and lower the hazard of future insect problems within treatment units. Prescribed fire will be used to reduce

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
- In riparian areas, any timber harvest should be on a 240 year rotation, and harvest types should be selection or group selection.	natural fuels. Refer to the final environmental impact statement, Forested Vegetation Specialist Report and Fuels Specialist Report.

Management Area W-1
86,100 ACRES

Description:
This management area contains a variety of wildlife habitat ranging from important big game summer range to big game winter range. It has a variety of physical environments including riparian, calving or fawning areas, and hiding cover. All slopes, aspects and elevations are represented as well as a wide variety of vegetation ranging from grasslands to densely timbered areas.

Management Goals:
Optimize wildlife habitat potential, including old growth, over the long term.
Provide for other resource uses, if they are compatible with wildlife management goals.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
Recreation - Controls over motorized recreation will be implemented where necessary to protect wildlife habitat values of this area. - Non-motorized dispersed recreation may be supported by constructing trails and trailhead facilities when compatible with management area goals.	There are no recreation facilities activities proposed by this project in these areas or riparian habitat conservation areas. Standard does not apply.
Visual - Management practices will generally follow guidelines for the partial retention visual quality objective. Exceptions may occur on a case-by-case basis to meet wildlife objectives. The portions of this area (if any) that are within the sensitive viewing areas of the roads, trails, and areas listed in appendix B of the Forest Plan will be managed to meet the visual quality objectives noted in the appendix. [See Forest Landscape Book, Volume 2 (Ag. Hdbk. No. 462) for definitions of visual quality objectives and how they are applied].	This standard is met. The potential direct, indirect, and cumulative effects of the proposed activities to visual resources will be consistent with forest plan direction for visual resources because the application of the landscape rehabilitation management alternative as outlined in the visual management system will allow a longer period of time for the retention visual quality objectives to be achieved.
Wildlife and Fisheries - Wildlife habitat improvement practices, including road management, prescribed fire, and other techniques, will be used to maintain and/or enhance the quality of big game and nongame habitat. - Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing at least 25 percent cover, where available, on identified winter range.	Management Area W-1 Standards (Forest Plan pp. III/50-52) *"Wildlife habitat improvement practices, including road management, prescribed fire and other techniques, may be used to maintain and/or enhance the quality of big game summer habitat."* The Decision is consistent with this standard as new roads will be closed to public use and decommissioned following implementation; prescribed fire will improve forage palatability and production in big game summer ranges. *"Maintain adequate thermal and hiding cover adjacent to forage areas. Generally this means providing 25 percent thermal cover, where available, on identified winter range."* Existing thermal cover on winter range in W-1 is 22 percent. Although thermal cover is currently below the Forest plan standard, the Decision does not affect any thermal cover on winter range in W-1. Therefore this standard isn't applicable.
Range - Livestock grazing generally does not occur in this management area, except for minor amounts within existing allotments. Livestock grazing will continue within active allotments, however, the level may be increased or decreased if monitoring or range analysis shows a need or opportunity to change.	This standard will be met by project design features (RNG-1 to 3).
Timber - Timber will be harvested only if it can be used as a tool to maintain or enhance wildlife habitat values. Productive forest land is classified as unsuitable for timber management.	This standard will be met by project design features (SILV-1 to 5).
Minerals – Locatable - Timing of mineral activities will be coordinated where practical with the needs of wildlife. This generally will require negotiations during development of operating plans for no surface occupancy during critical wildlife use. - Leasable - See Forest Plan Amendment #13 for lease Standards.	This standard does not apply to this project. No minerals management is proposed in this project.
Facilities - Roads will generally not be constructed for surface management activities within this area. Exceptions may occur if	This standard does not apply to this project. No facility management is proposed in this project.

MA STANDARDS	If Standard applies, how is standard being met, and where in the project file is the documentation?
needed for wildlife improvement projects. Roads through this area, which provide access to adjacent areas, are permitted only if project planning indicates it is the most feasible access. - Road construction should avoid important big game areas, such as wet, boggy areas.	
Protection - Areas will be evaluated periodically for significant insect and disease problems. Endemic levels will be accepted as normal. If epidemic levels develop and control is necessary, the control method should minimize impacts on big game and other wildlife values. - The appropriate fire suppression response ranges from control to confinement in this management area depending upon location, expected fire behavior, and other decision criteria related to values at risk. These decision criteria are stated in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire with planned ignitions will be used in this management area, for the enhancement and maintenance of resources. - Prescribed fire with unplanned ignitions may be used in this management area, for the enhancement and maintenance of resources, when within pre-established prescribed fire criteria. These criteria are detailed in the Fire Management Direction in appendix R of the Forest Plan. - Prescribed fire may be used as a tool to reduce natural fuels and improve quantity and quality of wildlife forage.	This standard is met. Proposed harvest will respond to insect-caused mortality and lower the hazard of future insect problems within treatment units. Prescribed fire will be used to reduce natural fuels. Refer to the final environmental impact statement, Forested Vegetation Specialist Report and Fuels Specialist Report.

Consistency with Northern Rockies Lynx Management Direction objectives, standards and guidelines for the decision

Table 49: Consistency with NRLMD objectives, standards and guidelines for the decision

Northern Rockies Lynx Management Direction	Consistency with the Decision
ALL MANAGEMENT PRACTICES AND ACTIVITIES (ALL) *The following objectives, standards and guidelines apply to management projects in lynx habitat in lynx analysis units (LAU) and in linkage areas, subject to valid existing rights. They do not apply to wildfire suppression, or to wildland fire use*	
Objective[30] ALL O1 Maintain[26] or restore[39] lynx habitat[23] connectivity[16] in and between LAUs[21], and in linkage areas[22].	Some forested connections between older forests would be altered due to reductions in cover, but remaining forests and sapling stands would retain connectivity for lynx. No new permanent roads would be constructed. Connectivity would be maintained within project lynx analysis units and the linkage area. Complies with ALL O1 and ALL S1.
Standard[43] ALL S1 New or expanded permanent developments[33] and vegetation management projects[48] must maintain[26] habitat connectivity[16] *in an lynx analysis units and/or linkage area*[22].	Some forested connections between older forests would be altered due to reductions in cover, but remaining forests and sapling stands would retain connectivity for lynx. No new permanent roads would be constructed. Connectivity would be maintained within project lynx analysis units and the linkage area. Complies with ALL O1 and ALL S1.
Guideline[15] ALL G1 Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways[18] or forest highways[12] across federal land. Methods could include fencing, underpasses or overpasses.	The project does not include construction or reconstruction of highways or forest highways. Guideline is not applicable.
Standard LAU S1 *Changes in lynx analysis units[21] boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.*	Lynx analysis units boundaries have not been changed. Standard is not applicable.
VEGETATION MANAGEMENT PROJECTS (VEG) *The following objectives, standards and guidelines apply to vegetation management projects in lynx habitat in lynx analysis units (LAU). With the exception of Objective VEG O3 that specifically concerns wildland fire use, the objectives, standards and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments like mineral operations, ski runs, roads and the like. None of the objectives, standards, or guidelines apply to linkage areas.*	
Objective VEG O1 – Manage vegetation to mimic or approximate natural succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.	Proposed treatments are designed to restore naturally occurring fire regimes and associated vegetative communities. Natural succession and disturbance processes would be approximated and habitat components would be maintained. Complies with Veg O1.
Objective VEG O2 – Provide a mosaic of habitat conditions through time that support dense horizontal cover and high densities of snowshoe hares. Provide winter snowshoe hare habitat in both the stand initiation structural stage and in mature, multi-story conifer vegetation.	The mosaic would be provided over time, including areas of dense horizontal cover. Complies with VEG O2.
Objective VEG O3 – Conduct fire use activities to restore ecological processes and maintain or improve lynx habitat.	This project includes prescribed fire treatments that would improve the ability to use naturally ignited wildland fires to accomplish future resource objectives and maintain or restore lynx habitat.
Objective VEG O4 – Focus vegetation management in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover.	Most of the vegetation management proposed would occur in habitats with poorly developed understories or in areas with high mortality due to insect infestations. Complies with Veg O4.
Standard VEG S1 – Stand initiation structural stage limits Standard VEG S1 applies to all vegetation management[48] projects that regenerate[37] timber, except for fuel treatment[13] projects within the wildland urban interface	No vegetation or fuel treatments would result in more than three adjacent lynx analysis units exceeding this standard. BL-08 currently exceeds the standard due to past wildfires. No additional regeneration treatments other than fuel treatments within the wildland urban interface would occur in BL-08. BL-07 and other adjacent lynx analysis

Northern Rockies Lynx Management Direction	Consistency with the Decision
(WUI)[49] as defined by Healthy Forest Restoration Act, subject to the following limitation: Fuel treatment projects within the wildland urban interface that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest). For fuel treatment projects within the wildland urban interface see guideline VEG G10. **The Standard:** Unless a broad scale assessment has been completed that substantiates different historic levels of stand initiation structural stages[44] limit disturbance in each lynx analysis units as follows: If more than 30 percent of the lynx habitat in a lynx analysis unit is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.	units would remain below 30 percent. Far less than 6 percent of Helena National Forest's allowance would be used for fuel treatment exemptions in the wildland urban interface. Complies with Veg S1.
<u>Standard VEG S2</u> – Limits on regeneration from timber management projects Standard VEG S2 applies to all vegetation management[48] projects that regenerate[37] timber, except for fuel treatment[13] projects within the wildland urban interface[49] as defined by Healthy Forest Restoration Act, subject to the following limitation: Fuel treatment projects within the wildland urban interface[49] that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest). For fuel treatment projects within the wildland urban interface[49] see guideline VEG G10. **The Standard:** Timber management projects shall not regenerate[37] more than 15 percent of lynx habitat on National Forest System lands in an lynx analysis units in a ten-year period.	Less than 15 percent of lynx habitat by lynx analysis unit would be regenerated by this project in any 10-year period. Only 5 percent of lynx habitat in BL-08 and 12% of BL-07 would be treated over a ten year period. Complies with Veg S2.
<u>Standard VEG S5</u> – Pre-commercial thinning limits Standard VEG S5 applies to all pre-commercial thinning[35] projects, except for fuel treatment[13] projects that use pre-commercial thinning as a tool within the wildland urban interface[49] as defined by Healthy Forest Restoration Act, subject to the following limitation: Fuel treatment projects within the wildland urban interface[49] that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest). For fuel treatment projects within the wildland urban interface[49] see guideline VEG G10. **The Standard:** Pre-commercial thinning projects that reduce snowshoe hare habitat, may occur from the stand initiation structural stage[44] until the stands no longer provide winter snowshoe hare habitat only: 1. Within 200 feet of administrative sites, dwellings, or outbuildings; or 2. For research studies[38] or genetic tree tests evaluating genetically improved reforestation stock; or Based on new information that is peer reviewed and accepted by the regional levels of the Forest Service and U.S. Fish and Wildlife Service, where a written determination states: a. that a project is not likely to adversely affect lynx; or b. that a project is likely to have short term adverse effects on lynx or its habitat, but would result in long-term benefits to lynx and its habitat; or 4. For conifer removal in aspen, or daylight thinning[5] around individual aspen trees, where aspen is in decline; or	All pre-commercial thinning in BL-08 and BL-07 would occur within the wildland urban interface as allowed under the fuel treatment exemptions in the Northern Rockies Lynx Management Direction. Complies with Veg S5.

Northern Rockies Lynx Management Direction	Consistency with the Decision
5. For daylight thinning of planted rust-resistant white pine where 80 percent of the winter snowshoe hare habitat[50] is retained; or 6. To restore whitebark pine.	
Standard VEG S6 – Multi-storied stands & snowshoe hare horizontal cover Standard VEG S6 applies to all vegetation management[48] projects that regenerate[37] timber, except for fuel treatment[13] projects within the wildland urban interface[49] as defined by Healthy Forest Restoration Act, subject to the following limitation: Fuel treatment projects within the wildland urban interface [49] that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest). For fuel treatment projects within the wildland urban interface[49] see guideline VEG G10. **The Standard:** Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional forests[29] may occur only: 1. Within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use permit improvements, including infrastructure within permitted ski area boundaries; or 2. For research studies[38] or genetic tree tests evaluating genetically improved reforestation stock; or 3. For incidental removal during salvage harvest[41] (e.g. removal due to location of skid trails). (NOTE: Timber harvest is allowed in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover [e.g. uneven age management systems could be used to create openings where there is little understory so that new forage can grow]).	No harvest activities or burning would occur in multistory lynx feeding habitat outside of the wildland urban interface. Approximately 100 acres occurring in prescribed burn units outside the wildland urban interface would be avoided through ignition patterns. Approximately 496 acres of multi-storied habitat would be treated within the wildland urban interface, as allowed under the Northern Rockies Lynx Management Direction. Complies with VEG S6.
Guideline VEG G1 – Lynx habitat improvement Vegetation management[48] projects should be planned to recruit a high density of conifers, hardwoods, and shrubs where such habitat is scarce or not available. Priority should be given to stem-exclusion, closed-canopy structural stage[44] *stands for lynx or their prey (e.g. mesic, monotypic lodgepole stands).* Winter snowshoe hare habitat[50] should be near denning habitat[6].	Approximately 75 percent of treatments would occur in stands that currently do not provide structural conditions necessary for winter hare habitat. Approximately 95 percent BL-08 and 88 percent of BL-07 would not be treated. Treatment would maintain or increase aspen and whitebark pine, as well as promote the development of understory shrubs and increase the diversity of prey habitat across the landscape. Winter hare habitat would remain close to potential lynx denning habitat. Complies with VEG G1.
Guideline VEG G4 – Prescribed Fire Prescribed fire[34] activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.	Planned prescribed burning activities are not expected to create permanent travel routes or facilitate snow compacting activities. While some burning to ridgelines and saddles would occur, most burning occurs on steeper slopes away from existing snowmobile trails. Burned trees would be left standing; portions of all units will be unburned; and establishment of woody vegetation following treatment will reduce any long-term access. Complies with VEG G4.
Guideline VEG G5 – Habitat for alternate prey species Habitat for alternate prey species, primarily red squirrel[36], should be provided in each lynx analysis units.	Approximately 89 percent of the existing mature coniferous forest in the lynx analysis units will not be treated providing considerable habitat for alternate prey within the lynx analysis units. Improvement cuts in mature stands will maintain lower levels of red squirrel habitat. Treatments would maintain or promote tree diversity, seed production and red squirrel habitat over the long-term. Complies with VEG G5.
Guideline VEG G10 – Fuel treatments in the wildland urban interface *Fuel treatment projects in the wildland urban interface [49] as defined by Healthy Forest Restoration Act [17, 48] should be designed considering standards VEG S1, S2, S5, and S6 to promote lynx conservation.*	These standards were considered by excluding harvest outside the wildland urban interface, leaving untreated acres within the wildland urban interface for habitat diversity and connectivity and spatially and temporally distributing burn treatments. Lynx foraging habitat and travel cover would continue to be well distributed throughout the project lynx analysis units. Treatment in many units would promote greater habitat diversity and/or retain future lynx foraging habitat. Complies with VEG G10.
Guideline VEG G11 – Denning habitat	Over 80 percent of the existing suitable habitat will be unaffected and den habitat will continue to be widely available in both lynx analysis units. Proposed treatments are designed to retain patches of dead and dying trees which would contribute to coarse

Northern Rockies Lynx Management Direction	Consistency with the Decision
Denning habitat[6] should be distributed in each lynx analysis units in the form of pockets of large amounts of large woody debris, either down logs or root wads, or large piles of small wind thrown trees ("jack-strawed" piles). If denning habitat appears to be lacking in the lynx analysis units, then projects should be designed to retain some coarse woody debris[4], piles, or residual trees to provide denning habitat[6] in the future.	woody debris recruitment. A minimum of 5 to 20 tons per acre of downed woody debris would be retained and project design features require retention of large diameter snags and logs. Burning would be designed to retain pockets of understory vegetation and shrubs and greater than 30 percent of the burn units would be unburned. Complies with VEG G11.
LIVESTOCK MANAGEMENT (GRAZ) T*he following objectives and guidelines apply to grazing projects in lynx habitat in lynx analysis units (LAU). They do not apply to linkage areas.*	
Guideline GRAZ O1 - Manage livestock grazing to be compatible with improving or maintaining lynx habitat.	Existing grazing patterns would be largely unchanged. Grazing may be deferred in treatment units where aspen is regenerating and where necessary to establish vegetation. Treatments would increase landscape level forage, maintain riparian areas, promote shrub and understory diversity and maintain or improve aspen. Complies with GRAZ O1.
Guideline GRAZ G1 – Livestock grazing and openings In fire- and harvest-created openings, livestock grazing should be managed so impacts do not prevent shrubs and trees from regenerating.	Livestock grazing will be maintained at existing levels unless range analysis monitoring indicates that changes in numbers are necessary. Grazing systems will be designed to be compatible with wildlife needs and if necessary improvements for livestock management will be designed in cooperation with a wildlife biologist. Complies with GRAZ G1.
Guideline GRAZ G2 – Livestock grazing and aspen In aspen stands, livestock grazing should be managed to contribute to the long-term health and sustainability of aspen.	Grazing will be maintained at existing levels unless monitoring indicates that changes in numbers are necessary. Fencing, temporary herding, or other techniques may be used to protect regeneration and aspen where needed. Complies with GRAZ G2.
Guideline GRAZ G3 – Livestock grazing and riparian areas & willow carrs In riparian areas[40] and willow carrs[3], livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages[28], similar to conditions that would have occurred under historic disturbance regimes.	Livestock use is not expected to change and INFISH buffers and monitoring will continue to be implemented to reduce grazing related impacts in riparian areas. Complies with GRAZ G3.
Guideline GRAZ G4 – Livestock grazing and shrub-steppe habitats In shrub-steppe habitats[42], livestock grazing should be managed in the elevation ranges of forested lynx habitat in lynx analysis units[21], to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.	Livestock grazing will be maintained at existing levels unless range analysis monitoring indicates that changes in numbers are necessary. Grazing systems will be designed to be compatible with wildlife needs and if necessary improvements for livestock management will be designed in cooperation with a wildlife biologist. Complies with GRAZ G4.
HUMAN USE PROJECTS (HU) The following objectives and guidelines apply to *human use projects, such as special uses (other than grazing), recreation management, roads, highways, mineral and energy development, in lynx habitat in lynx analysis units (LAU),* subject to valid existing rights. *They do not apply to vegetation management projects or grazing projects directly. They do not apply to linkage areas.*	
Objective HU O1 -Maintain the lynx's natural competitive advantage over other predators in deep snow by discouraging the expansion of snow-compacting activities in lynx habitat.	No new permanent roads would be constructed and access management would not change. Cross-country over-snow travel is already allowed on most U.S. Forest Service project lands outside big game winter range. While some increased winter motorized use is likely within low-elevation treatment units it would be limited in time by shrub and conifer regeneration and restrictions to designated routes only in big game winter range. Snowmobile use of burned areas is not expected to increase due to standing dead tree component. Complies with HU O1.
Objective HU O2 Manage recreational activities to maintain lynx habitat and connectivity.	Recreational activities are focused along narrow corridors. These activities are not known to affect lynx connectivity or habitat (Squires et al. 2006 and 2013). Complies with HU O2.
Objective HU O3 Concentrate activities in existing developed areas, rather than developing new areas in lynx habitat.	No new recreation sites would be developed. Complies with HU O3.

Northern Rockies Lynx Management Direction	Consistency with the Decision
Objective HU O4 Provide for lynx habitat needs and connectivity when developing new or expanding existing developed recreation sites or ski areas.	(Not applicable)
Objective HU O5 Manage human activities, such as special uses, mineral and oil and gas exploration and development, and placement of utility transmission corridors, to reduce impacts on lynx and lynx habitat.	(Not applicable)
Objective HU O6 Reduce adverse highway effects on lynx by working cooperatively with other agencies to provide for lynx movement and habitat connectivity, and to reduce the potential of lynx mortality.	(Not applicable)
Guideline HU G1 – Ski area expansion & development, inter-trail islands When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris[4], so winter snowshoe hare habitat[49] is maintained.	(Not applicable)
Guideline HU G2 – Ski are expansion & development, foraging habitat When developing or expanding ski areas, foraging should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes.	(Not applicable)
Guideline HU G3 – Recreation developments Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat[23].	(Not applicable)
Guideline HU G4 – Mineral & energy development For mineral and energy development sites and facilities, remote monitoring should be encouraged to reduce snow compaction.	(Not applicable)
Guideline HU G5 – Mineral & energy development, habitat restoration For mineral and energy development sites and facilities that are closed, a reclamation plan that restores[39] lynx habitat should be developed.	(Not applicable)
Guideline HU G6 – Roads, upgrading Methods to avoid or reduce effects to lynx should be used in lynx habitat when upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.	No unpaved roads would be upgraded to maintenance levels 4 or 5. Complies with G6.
Guideline HU G7 – Roads, locations New permanent roads should not be built on ridge-tops and saddles, or in areas identified as important for lynx habitat connectivity[16]. New permanent roads and trails should be situated away from forested stringers.	No new permanent (system) roads would be constructed, temp roads would be obliterated within two years following harvest, and no changes to access management would occur. Complies with HU G7.
Guideline HU G8 – Roads, brushing Cutting brush along low-speed[25], low-traffic-volume roads should be done to the minimum level necessary to provide for public safety.	Funding constraints limit this to the minimum necessary for safety. Complies with HU G8.
Guideline HU G9 – Roads, new On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.	Public motorized use would be restricted on the 0.9 miles of temp roads. Permanent (system) roads improved for this project would be managed in accordance with current public travel management restrictions. Complies with HU G9.
Guideline HU G10 – Roads, ski area access	(Not applicable)

Northern Rockies Lynx Management Direction	Consistency with the Decision
When developing or expanding ski areas and trails, access roads and lift termini to maintain and provide lynx security[10] habitat.	
Guideline HU G11 – Snow compaction Designated over-the-snow routes, or designated play areas, should not expand outside baseline areas of consistent snow compaction[1], unless designation serves to consolidate use and improve lynx habitat. This is calculated on an lynx analysis unit basis, or on a combination of immediately adjacent lynx analysis units. This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings, or to access regulated by Guideline HU G12. Use the same analysis boundaries for all actions subject to this guideline.	(Not applicable)
Guideline HU G12 – Winter access for non-recreation Special Use Permit & mineral & energy development Winter access for non-recreation special uses, and mineral and energy exploration and development, should be limited to designated routes[8] or designated over-the-snow routes[7].	(Not applicable)
LINKAGE AREAS (LINK) The following objective, standard and guidelines apply to *all projects within linkage areas*, subject to valid existing rights.	
Objective LINK O1 - In areas of intermingled land ownership, work with landowners to pursue conservation easements, habitat conservation plans, land exchanges, or other solutions to reduce the potential of adverse impacts on lynx and lynx habitat.	(Not applicable)
Standard LINK S1 – Highway or forest highway construction in linkage areas When highway[18] or forest highway[12] construction or reconstruction is proposed in linkage areas[22], identify potential highway crossings.	(Not applicable)
Guideline LINK G1 – Land exchanges National Forest System lands should be retained in public ownership.	(Not applicable)
Guideline LINK G2 – Livestock grazing in shrub-steppe habitats *Livestock grazing in shrub-steppe habitats[42] should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages[28], similar to conditions that would have occurred under historic disturbance regimes.*	Livestock grazing will be maintained at existing levels unless range analysis monitoring indicates that changes in numbers are necessary. Grazing systems will be designed to be compatible with wildlife needs and if necessary improvements for livestock management will be designed in cooperation with a wildlife biologist. Complies with LINK G2.

Appendix G: U.S. Fish and Wildlife Service's Incidental Take Statement and Terms & Conditions from the Fisheries and Terrestrial Biological Opinion documents

United States Department of the Interior

Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225, Fax: (406) 449-5339

In Reply Refer To:

File: M19 Helena-Lewis and Clark National Forest

Terrestrial Species: 06E11000-2016-F-0413 Stonewall Vegetation Project Aquatic Species: 06E11000-2015-F-0406 Stonewall Vegetation Project

August 24, 2016

Michael Stansberry, District Ranger
Lincoln Ranger District
Helena-Lewis and Clark National Forest
7269 Highway 200
Lincoln, Montana 59639

Dear Mr. Stansberry:

This is in response to your request for U.S. Fish and Wildlife Service (Service) review of the biological assessments for the proposed Stonewall Vegetation Project (Stonewall Project). The biological assessments analyzed the effects of the proposed action on federally listed threatened species and designated critical habitat, specifically grizzly bears (*Ursus arctos horribilis*), Canada lynx (*Lynx canadensis*), designated Canada lynx critical habitat, bull trout (*Salvelinus confluentus*), and designated bull trout critical habitat. The Helena-Lewis and Clark National Forest (Forest) made a determination of may affect, likely to adversely affect for grizzly bears, lynx, lynx critical habitat, bull trout, and bull trout critical habitat. Although your initial request was dated May 5, 2015, revisions and additional information to both the action and the analysis regarding the Stonewall Project were received through August 8, 2016.

This document represents the findings required of the Service under section 7(a)(2) of the Endangered Species Act of 1973 (as amended) (Act) regarding the effects from the proposed action to species listed and critical habitat designated under the Act. We discuss and explain our findings below.

The Stonewall Project is located on the Lincoln Ranger District of the Forest, approximately three miles north and west of Lincoln, Montana. The project focuses on reducing hazardous fuel buildup and improving forest health by using various vegetative treatments on approximately 4,868 acres including:

1,423 acres of commercial harvest; 690 acres of precommercial thinning; and 2,755 acres of prescribed burning. Approximately 32.4 miles of road would be used as haul routes during implementation. This includes 31.5 miles of existing road requiring maintenance or improvements and 4 new road segments of temporary road totaling 0.9 mile. Each of the four new segments of temporary road will be obliterated within two years of construction. Additional project information can be found in the biological assessments prepared for the Stonewall Project.

Grizzly Bear

The following paragraphs describe the relationship of access management to the proposed action. Recently, on August 3, 2016, the Service issued a programmatic non-jeopardy biological opinion and incidental take statement (2016 programmatic biological opinion) regarding the effects of the Blackfoot Non-Winter Travel Plan (Travel Plan) (U.S. Fish and Wildlife Service 2016). The 2016 programmatic biological opinion was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.).

The biological opinion on the Travel Plan analyzed the effects of Forest access management direction on grizzly bears, including access management in the action area (U.S. Fish and Wildlife Service 2016, pp 20-32). This includes the effects of existing, ongoing access management conditions (i.e., baseline condition) in each Northern Continental Divide Ecosystem (NCDE) recovery zone grizzly bear subunit on the Forest as well as areas outside of the recovery zone.

The 2016 programmatic biological opinion was designed as the first-tier of a tiered consultation framework on the programmatic direction of the Travel Plan. Second-tier consultations include the review of site specific projects related to the programmatic consultation on the Travel Plan. This consultation for the Stonewall Project is a second-tier consultation. The intent of this second-tier consultation is to evaluate whether the adverse effects on grizzly bears related to the proposed action are consistent with the 2016 programmatic biological opinion and incidental take statement.

In our review of the adverse effects of the Stonewall Project, we find that the existing access condition of the Red Mountain and Arrastra Mountain grizzly bear subunits and the road use within these subunits associated with the proposed action are consistent with our analysis of effects on grizzly bears in the 2016 programmatic biological opinion and incidental take statement. This second-tier consultation for the Stonewall Project illustrates how these adverse effects on grizzly bears related to the proposed action fall within the scope of our 2016 programmatic biological opinion and incidental take statement. The proposed action would not adversely affect grizzly bears in ways other than those previously analyzed in the 2016 programmatic biological opinion.

The existing condition of open and total motorized route density and core do not meet the 19/19/68 Guidelines (as explained in the biological opinion on the Travel Plan) within the Red Mountain subunit and total motorized route density does not meet the 19/19/68 guidelines within the Arrastra Mountain subunit. The existing, ongoing access condition is likely resulting in adverse effects to grizzly bears. Under the proposed action, no changes from the existing access condition would occur within the Red Mountain subunit. Approximately 0.9 mile of temporary road would be constructed and used within the Arrastra Mountain subunit, temporarily increasing open motorized route density (OMRD). However, the increase in OMRD would continue to meet the 19/19/68 guidelines and adverse effects to grizzly bears due to this increase would not occur. Upon completion of the proposed action the 0.9 mile of temporary road would be obliterated and OMRD would return to the existing condition. No other changes from the existing access condition would occur within the Arrastra Mountain subunit.

Upon review of the 2016 revised biological assessment for the proposed action (U.S. Forest Service 2016) and the 2016 programmatic biological opinion (U.S. Fish and Wildlife Service 2016), it is our

opinion that the existing access condition and the road use associated with the Stonewall Project would not impart any adverse effects to grizzly bears in addition to those analyzed in the 2016 programmatic biological opinion and that the proposed action is in compliance with the incidental take statement of that opinion.

In addition to access management, effects of other aspects of the proposed action have also been considered. Project-related effects of the proposed action other than the effects related to access described above will not result in adverse effects to grizzly bears. Proposed activities may result in short-term disturbance in the immediate vicinity of the treatment units. Greater than 80 percent of the harvest is located in close proximity to existing roads and residences, thus much of the area may already be avoided by grizzly bears. Untreated habitat is widely available within the action area to accommodate grizzly bear use during activity. Additionally, seasonal operating restrictions until May 31 would reduce the potential to disturb grizzly bears during the spring season. Disturbance effects to grizzly bears as a result of the Stonewall Project would be short-term and insignificant.

A temporary reduction in cover will occur with regeneration harvest. In the partial or intermediate harvest units, residual overstory cover will be maintained on 25 to 50 percent of the sites treated. Also, riparian buffers would be maintained and interspersed throughout many of the units. While the amount of cover in some treatment units may decrease temporarily, it is expected that overall intermediate harvest prescriptions would provide adequate cover. Where a reduction in forested cover will occur, forage availability is likely to increase within treatment areas as opening the canopies would stimulate the understory growth of grasses and forbs, thus enhancing the forage value. Cover and forage availability will vary over time and by site. Opportunities for grizzly bears to move between habitats would continue to be present within the project area as well as lands within the remainder of the action area. No denning habitat occurs in the harvest units. While some potential denning habitat occurs within the prescribed burn units, none is within denning habitat that supports north slopes, which are more frequently selected for denning. The effects of the proposed action on grizzly bear cover, forage, and denning habitat would be insignificant.

Forest Order H-05-01, which addresses food and garbage storage in a bear-resistant manner, is in effect in the action area and a clause that requires contractors to adhere to this order will be included in all contracts associated with the proposed action. With proper food and attractant storage, the potential of attracting grizzly bears into the treatment units would be reduced and the potential for conflicts between grizzly bears and personnel associated with the action would be minimized. With such measures taken to minimize the potential for grizzly bear-human conflicts, the effects of such conflicts are expected to be discountable.

In summary, with the exception of effects related to access, the remaining effects to grizzly bears as a result of the proposed action would be insignificant and/or discountable. Additional analysis on the effects of the proposed action can be found in the revised biological assessment prepared for the proposed action (U.S. Forest Service 2016).

Grizzly Bear Summary

The Service has reviewed the revised biological assessment regarding the effects of the Stonewall Project on grizzly bears. Other than access, no activities under the proposed action are likely to adversely affect grizzly bears. We find that the adverse effects related to the existing, ongoing access conditions were adequately analyzed in the 2016 programmatic biological opinion and the proposed actions related to access conform to the incidental take statement associated with this opinion. Our finding is based on: (1) the baseline access condition falls within the scope of the programmatic biological opinion, (2) the effects of access management are consistent with those anticipated and

analyzed in the programmatic biological opinion, (3) the amount of incidental take anticipated in the incidental take statement will not be exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the 2016 incidental take statement. Thus, the proposed action is consistent with the 2016 programmatic biological opinion and it's incidental take statement.

In summary, we reviewed: the revised biological assessment regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2016 programmatic biological opinion on the Travel Plan; the information we relied upon to develop the 2016 programmatic biological opinion; and information in our files. After our review of the those documents and the status of grizzly bears, the environmental baseline, the effects of the action, and the cumulative effects, it is the Services biological opinion that the Stonewall Project is **not likely to jeopardize** the continued existence of grizzly bears.

As provided in 50 C.F.R. § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (a) the amount or extent of taking specified in the incidental take statement is exceeded; (b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) a new species is listed or critical habitat designated that may be affected by the identified action.

Canada Lynx

On March 23, 2007, the Service issued a programmatic non-jeopardy biological opinion and incidental take statement (2007 programmatic biological opinion) on the effects of the Northern Rocky Mountains Lynx Management Direction (NRLMD) Amendment on the Distinct Population Segment (DPS) of Canada lynx (lynx) in the contiguous United States (U.S. Fish and Wildlife Service 2007). This opinion was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.).

The 2007 programmatic biological opinion was designed as the first tier of a tiered consultation framework on the programmatic direction of the NRLMD. Second-tier consultations include the review of subsequent projects related to the programmatic consultation on the NRLMD (U.S. Fish and Wildlife Service 2007, pp 39-41). This consultation for the Stonewall Project is a second-tier consultation. The intent of this second-tier consultation is to evaluate whether the adverse effects on Canada lynx related to the proposed action are consistent with the 2007 programmatic biological opinion and incidental take statement.

Under the exceptions and/or exemptions from the NRLMD standards VEG S1, S2, S5, and S6, limited fuel or timber management projects would be conducted within the wildland urban interface (WUI) and limited pre-commercial thinning for other resource benefits that affect snowshoe hare habitat (lynx foraging habitat) would occur. The Forest Service provided explicit estimates on the number of acres that would be impacted under the exceptions and exemptions. In our 2007 programmatic biological opinion, we analyzed the effects of such impacts on lynx and also provided an incidental take statement for these activities. This second-tier consultation for the Stonewall Project illustrates how the effects of the proposed action on Canada lynx fall within the scope of our 2007 programmatic biological opinion and incidental take statement. The proposed action would not adversely affect Canada lynx in ways other than those previously analyzed in the 2007 programmatic biological opinion.

Adverse effects to lynx as a result of the Stonewall Project are likely to occur due to the treatment of lynx foraging habitat (snowshoe hare habitat). Snowshoe hare habitat would be affected through the treatment of the horizontal structure of natural forest succession phases, and/or by altering the mosaics of the forested landscape in localized areas as discussed in the effects section of the 2007 programmatic biological opinion (U.S. Fish and Wildlife Service 2007, p. 37). In addition to effects to lynx foraging habitat, other effects to lynx have been considered. All other effects to lynx would be insignificant, also discussed in the effects section of the 2007 programmatic biological opinion (*Ibid*.).

The proposed action will treat approximately 379 acres of stand initiation lynx foraging habitat (all within LAU BL-07) using the exemption from amendment standard VEG S5 to thin conifers in the WUI for fuels reduction. Approximately 493 acres of multistory lynx foraging habitat (338 acres in LAU BL-07 and 155 acres in LAU BL-08) within the WUI would also be treated as part of the fuels reduction using the exemption from standard VEG S6. From 2007 to date, the total acreage of lynx habitat treated or proposed to be treated (have gone through consultation with the Service) in the WUI where exemptions to the standards are applied through Forest decisions, including the proposed action, is 1,003 acres. This total amount is well within the six percent (26,400 acres) anticipated for the Forest and analyzed in the 2007 programmatic biological opinion and incidental take statement. A large number of acres are not treated in any one limited geographic area of the Forest. Thus, the proposed action is consistent with the assumptions made in the 2007 programmatic biological opinion that fuel management projects within the WUI would be distributed throughout the Forest and would not be excessively concentrated within adjacent LAUs.

Approximately 2,373 acres of stem exclusion and/or mid-seral non-foraging habitat is proposed for treatment under the proposed action. These specific stands are characterized as having closed canopies with limited understories that lack dense cover preferred by hares and are generally not progressing towards year-round snowshoe hare habitat. These treatments do not reduce existing snowshoe hare habitat and have the potential to improve the habitat for snowshoe hares by either creating openings to allow understory growth or stimulating the regeneration of dense stands of young trees used by hares. Often, this type of treatment opens the closed canopy in these stands and as mentioned above, would likely create the potential for growth of new trees and thus horizontal structure in the understory, providing snowshoe hare habitat in the long-term. Impacts to this stem exclusion habitat would be insignificant to Canada lynx.

Lynx denning habitat does occur within the action area. As described in the biological assessment, large blocks of mature forest with significant amounts of coarse woody debris occur within the action area. Thus, denning habitat is not considered to be limiting on the landscape. Widespread, unaffected denning habitat is available within the action area and any effects to denning habitat would be minimal. Thus, we anticipate that any effects to lynx denning habitat would be insignificant to lynx.

The project area borders the western edge of the valley bottom where Forest lands and forest cover extend to Highway 200, providing a potential movement corridor to lands south of the project area. Although lynx movements may be altered by the harvest and burning activities and associated openings created, from a landscape perspective, these sites are scattered, interconnected with unaffected habitat, and are similar to openings created by natural disturbances. The proposed treatments are not expected to reduce connectivity within or between the LAUs.

In summary, with the exception of adverse effects related treatment of snowshoe hare habitat, the remaining effects to Canada lynx as a result of the proposed action would be insignificant. Additional analysis on the effects of the proposed action can be found in the revised biological assessment prepared for the proposed action (U.S. Forest Service 2016).

Canada lynx Summary

The Service has reviewed your revised biological assessment regarding the effects of the Stonewall Project on Canada lynx. We find that the adverse effects were adequately analyzed in the 2007 programmatic biological opinion and that the project conforms to the 2007 incidental take statement. Our finding is based on: (1) the proposed site-specific project falls within the scope of the 2007 programmatic biological opinion,(2) the effects of the proposed action from fuels reduction treatments in the WUI that result in snowshoe hare habitat degradation are consistent with those anticipated and analyzed in the 2007 programmatic biological opinion, (3) the amount of incidental take anticipated in the 2007 incidental take statement has not been exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the 2007 incidental take statement. Therefore, the proposed action is consistent with the 2007 programmatic biological opinion and incidental take statement.In summary, we reviewed: the revised biological assessment regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2007 programmatic biological opinion on the NRLMD; the information we relied upon to develop that opinion; and information in our files. After our review of the those documents and the status of Canada lynx, the environmental baseline for the Stonewall Project action area, and the effects of the Stonewall Project including the cumulative effects, it is the Services biological opinion that the Stonewall Project is **not likely to jeopardize** the continued existence of Canada lynx.

As provided in 50 C.F.R. § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (a) the amount or extent of taking specified in the incidental take statement is exceeded; (b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) a new species is listed or critical habitat designated that may be affected by the identified action. Canada Lynx Critical Habitat, Bull Trout, and Bull Trout Critical Habitat

The attached biological opinion addresses the effects of the proposed action on Canada lynx critical habitat, bull trout, and bull trout critical habitat and is based on information provided for this action in the biological assessments prepared for the Stonewall Project and additional information received during the consultation process as well as information in our files. The biological opinion was prepared in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). A complete project file of this consultation is on file at the Service's Montana Field Office.

We appreciate your efforts to ensure the conservation of threatened and endangered species as part of your responsibilities under the Endangered Species Act, as amended. If you have questions or comments related to this consultation, please contact Katrina Dixon at 406-449- 5225, extension 222 or Tom Olenicki at extension 213.

Sincerely,

Jodi L. Bush
Office Supervisor

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by the Helena- Lewis and Clark National Forest (Forest) so that they become binding conditions of any contract issued for the exemption in section 7(o)(2) to apply. The Forest has a continuing duty to regulate and oversee the activity covered by this Incidental Take Statement. If the Forest fails to assume and implement the terms and conditions of the Incidental Take Statement, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Forest must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR 402.14(i)(3)].

Amount or Extent of Take Anticipated

The Service anticipates that the Stonewall Project would result in incidental take of bull trout in the form of harm or harassment. Ongoing effects of the existing road network have contributed to adverse baseline conditions for bull trout in the action area and reduced the ability for watersheds to function appropriately (U.S. Fish and Wildlife Service 2016). Additional short- term, minor degrade to habitat indicators *sediment* and *substrate embeddedness* during implementation of the Stonewall Project would be additive to those currently occurring.

However, the amount of take is difficult to quantify for the following reasons:

1) The amount of sediment produced from the existing road network and project activities is influenced by site parameters (topography, soil type, and vegetation), weather, location and condition of roads, traffic patterns, and frequency of use.

2) Location and amount of sediment delivered to streams depends on numerous factors (flow regime, size of stream, channel roughness, gradient).

3) Identification and detection of dead or impaired species is unlikely. Losses may also be masked by seasonal fluctuations in numbers.

4) Aquatic habitat modifications are difficult to ascribe to particular sources, especially in sub-watersheds that are currently degraded.

For these reasons, the Service has determined the actual amount or extent of incidental take is difficult to determine.

According to Service policy, as stated in the Endangered Species Consultation Handbook (Handbook; U.S. Fish and Wildlife Service. National Marine Fisheries Service, 1998), some detectable measure of effect should be provided, such as the relative occurrence of the species or a surrogate species in the local community, or amount of habitat used by the species, to serve as a measure for take. Take also may be expressed as a change in habitat characteristics affecting the species (Handbook, p 4-47 to 4-48). In instances where incidental take is difficult to quantify, the Service uses a surrogate measure of take.

In this biological opinion, the Service uses "timely implementation of road BMPs (described in the *Biological Assessment of Road Related Actions on Western Montana Federal Lands that are Likely to Adversely Affect Bull Trout* (U.S. Forest Service 2008)) on 4.6 miles of roads in Stonewall Project riparian conservation areas used for log hauling throughout the duration of the project" and "temporary degradation to habitat indicators (Table 4) that results from use of the existing road network during implementation of the Stonewall Project" as surrogates for anticipated levels of take. The level of take covered by these surrogate measures would be exceeded if; (1) road BMPs are not implemented prior to the first season of log hauling, maintained throughout the project duration, and applied after completion of log hauling, (2) if road BMPs are determined to be ineffective and corrective actions are not implemented within 10 working days (14 calendar days), or as agreed to by the Service, (3) the project extends beyond 9 years.

The Service anticipates that incidental take of bull trout would occur in the Blackfoot River and lower part of Keep Cool Creek in the Blackfoot River Core Area. The continued presence of bull trout in these streams is susceptible to adverse effects from project-related effects. Incidental take of bull trout is anticipated to occur during BMP implementation and log hauling activities for the duration of the project.

Effect of the Take

In the accompanying biological opinion, the Service determined that the extent and type of take described is not likely to jeopardize the continued existence of bull trout in the Blackfoot River Core Area of the Columbia Headwaters Recovery Unit.

Reasonable and Prudent Measures

Biological opinions provide reasonable and prudent measures that are expected to reduce the amount of incidental take. Reasonable and prudent measures are those measures necessary and appropriate to minimize incidental take resulting from proposed actions. Reasonable and prudent measures are nondiscretionary and must be implemented by the agency in order for the exemption in section 7(o)(2) to apply.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of bull trout.

1. Implement road BMPs and specific minimization measures identified for each Activity Type as developed in the *Biological Assessment of Road Related Actions on Western Montana Federal Lands that are Likely to Adversely Affect Bull Trout* (U.S. Forest Service 2008) on log haul routes in the Stonewall Project action area to reduce sediment production that increases the potential for incidental take of bull trout..

2. Reduce additional effects of the Stonewall Project that result from use of the existing road network.

3. Implement reporting requirements as outlined in the terms and conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Forest must comply with the following terms and conditions that implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary:

To fulfill reasonable and prudent measure #1 the following terms and conditions shall be implemented:

A. The Forest will ensure that all road improvements, maintenance, and standards for construction, as described by the proposed action, will be implemented.

B. During all road management actions, the Forest shall implement soil and water BMPs, as appropriate. BMPs will be installed prior to the first log haul season, preferably the season before log haul occurs.

C. During the implementation of harvest treatments, the Forest shall monitor riparian conservation area buffers to ensure they are not compromised by management activities or climatic events that influence buffer efficacy.

To fulfill reasonable and prudent measure #2 the following terms and conditions shall be implemented:

D. Within 4 years of starting the Stonewall Project, the Forest will complete all road closure, storage, decommissioning, removal of stream crossings, and the closure and rehabilitation of dispersed campsites near streams that were proposed under the Blackfoot Travel Plan for the five HUCs that comprise the Stonewall Project action area (Table 5).

Table 5. Change in open high risk roads, stream crossings, and dispersed campsites near streams that were proposed in the Blackfoot Travel Plan for 6th code HUCs in the Stonewall Project action area.

Watershed	High-Risk Roads[1] (miles)	Stream Crossings (#)	Dispersed Campsites near Streams[2] (#)
Beaver Creek	-1.5	-9	-6
Humbug Creek	-0.1	0	0
Keep Cool Creek	-2.7	-10	-3
Blackfoot River-Little Moose	-0.3	-3	0
Lincoln Creek	-0.8	-1	0
Total	-5.4	-23	-9

[1] High-risk roads are roads within INFISH buffers

[2] Within 50 feet of streams

To fulfill reasonable and prudent measure #3, the following terms and conditions shall be implemented:

E. The Forest shall provide reports on the progress of terms and conditions A, B, C, D, above,

annually by December 1, or by an alternate date as agreed upon with the Service.

F. Upon locating dead, injured or sick bull trout, or upon observing destruction of redds, notification must be made within 24 hours to the Montana Field Office at 406-449-5225. Record information relative to the date, time, and location of dead or injured bull trout when found, and possible cause of injury or death of each fish and provide this information to the Service.

Closing statement

The Service is unable to precisely quantify the number of bull trout that will be incidentally taken as a result of the Stonewall Project. Therefore, we use a surrogate measure for the amount of take we anticipate and provide, in the incidental take statement, specific measures of the incidental take we anticipate. We use "timely implementation of road BMPs on 4.6 miles of roads in Stonewall Project riparian conservation areas used for log hauling throughout the duration of the project" and "temporary degradation to habitat indicators (Table 4) that results from use of the existing road network during implementation of the Stonewall Project" as our surrogate measure of the incidental take we anticipate to result from the Stonewall Project.

Reasonable and prudent measures, with their implementing terms and conditions, are typically designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of take occurring exceeds that anticipated in this incidental take statement, such incidental take represents new information requiring reinitiation of consultation and review of the incidental take statement. The federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Conservation Recommendations

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary recommendations that: (1) identify discretionary measures a federal agency can take to minimize or avoid the adverse effects of a proposed action on listed or proposed species, or designated or proposed critical habitat, (2) identify studies, monitoring, or research to develop new information on listed or proposed species, or designated or proposed critical habitat, and (3) include suggestions on how an action agency can assist species conservation as part of their action and in furtherance of their authorities under section 7(a)(1) of the Act. The Service provides the following recommendations:

1. Section 2672.2 of the Forest Service Manual states: "The Forest Service must manage habitats at levels that accomplish the recovery of federally listed species so that protective measures under the Act are no longer necessary." The Conservation Strategy for Bull Trout on USFS Lands (U.S. Forest Service 2013) was intended, in part, to "help direct resources to the most important opportunities, where FS management has the potential to increase habitat quality and connectivity". The Bull Trout Conservation Strategy (U.S. Forest Service 2013) should be reviewed for management opportunities that will improve habitat conditions that are conducive to the recovery of bull trout.

2. The Forest should continue to monitor, inventory, investigate, and document bull trout populations and spawning activities throughout the action area and other potential areas of the Forest. For example, recent techniques using eDNA provide efficient, cost- effective methods

to document bull trout that other methods may not provide. The use of eDNA sampling or some other method of sampling is especially encouraged in priority watersheds on the Forest. All existing bull trout spawning surveys should be continued as a population monitoring tool using historic methods.

3. Work cooperatively with state, private, and other federal agencies to reduce adverse conditions, including impacts caused by lack of connectivity, drought, habitat degradation, water quality issues, barriers to fish passage, irrigation related issues including irrigation withdrawal and entrainment on private and other government lands in Blackfoot River Core Area of the Columbia Headwaters Recovery Unit. Areas for translocations in the core area should also be considered.

4. The Forest should consider the feasibility of relocating Copper Creek Road (FSR #330) to the bench outside of the Copper Creek floodplain starting approximately ¾ mile upstream of the Copper Creek Campground Road and tie back in with the road near Cotter Creek to remove the road from the dynamic floodplain.

5. The Forest should continue to explore right-of-way options to relocate reaches of FSR #330 in T15NR7WS23 to reduce chronic sediment delivery to Copper Creek.

6. The Forest should pursue collaborative funding and implementation with NGOs, Lewis and Clark County, and private landowners to replace any undersized or barrier culverts on Poorman Creek on Stemple Pass Road and its spurs. The Forest should work with Big Blackfoot Chapter of Trout Unlimited, the Blackfoot Challenge or other private partners to assess all stream crossings on Poorman Creek, regardless of ownership or management.

7. When possible, the Forest should consider conducting field surveys to verify or update indicator ratings of 6th level watersheds. Accurate representation of indicator values would provide improved assessments of watersheds that help identify areas for improvement to reach desired ratings (FA or FAR).

Reinitiation Notice

This concludes formal consultation for bull trout on the Stonewall Project for the Helena-Lewis and Clark National Forest. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded;

(2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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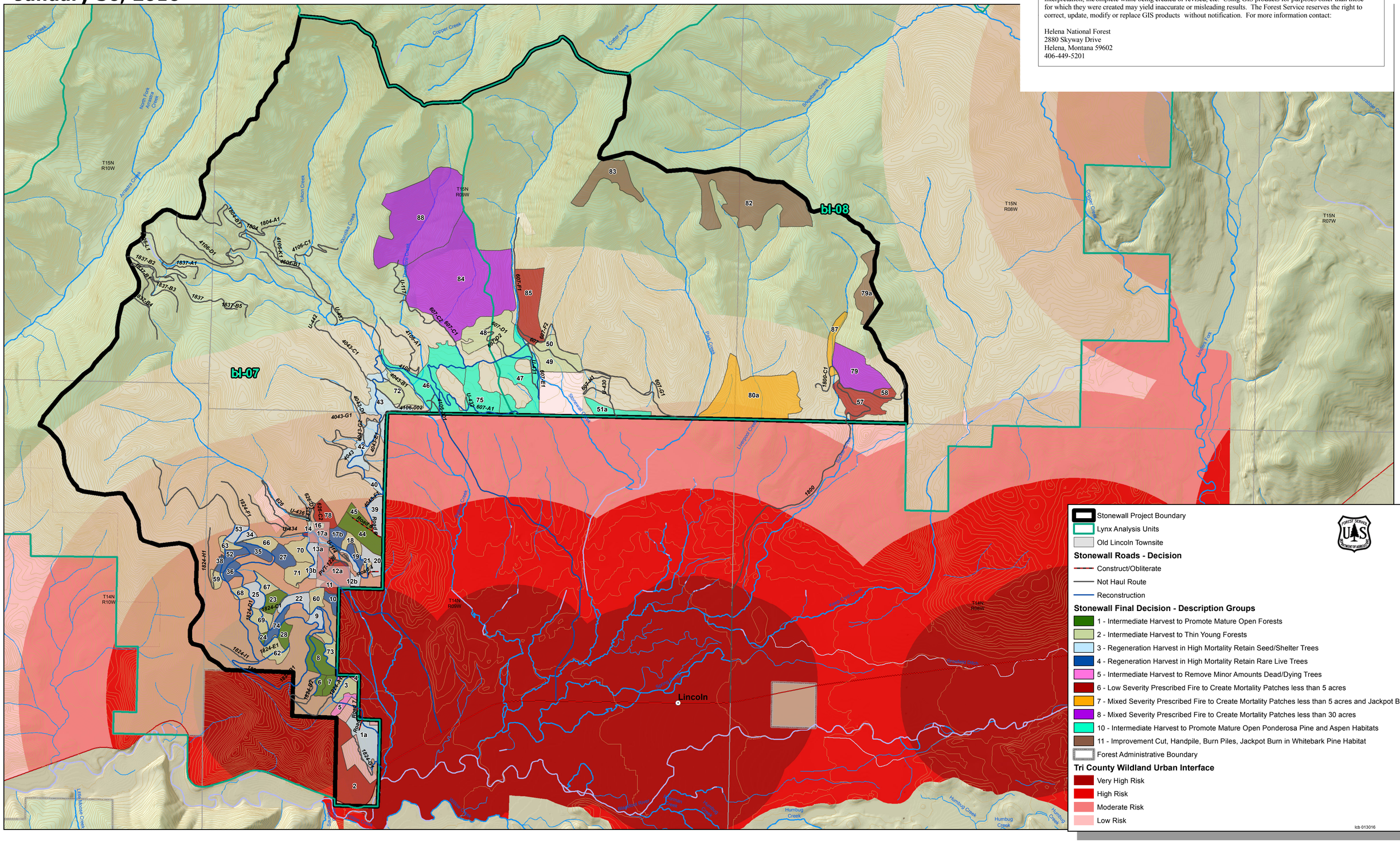
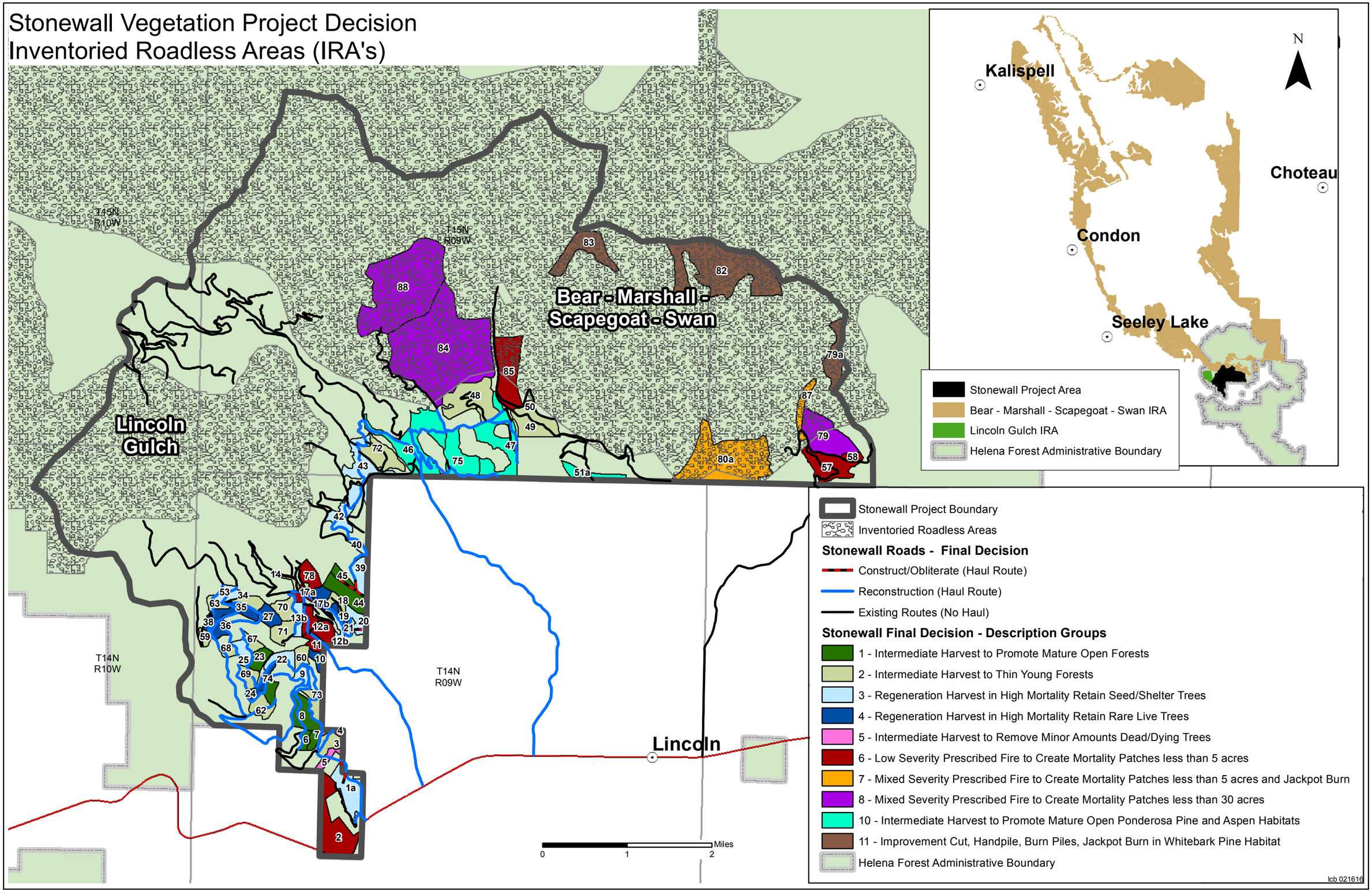
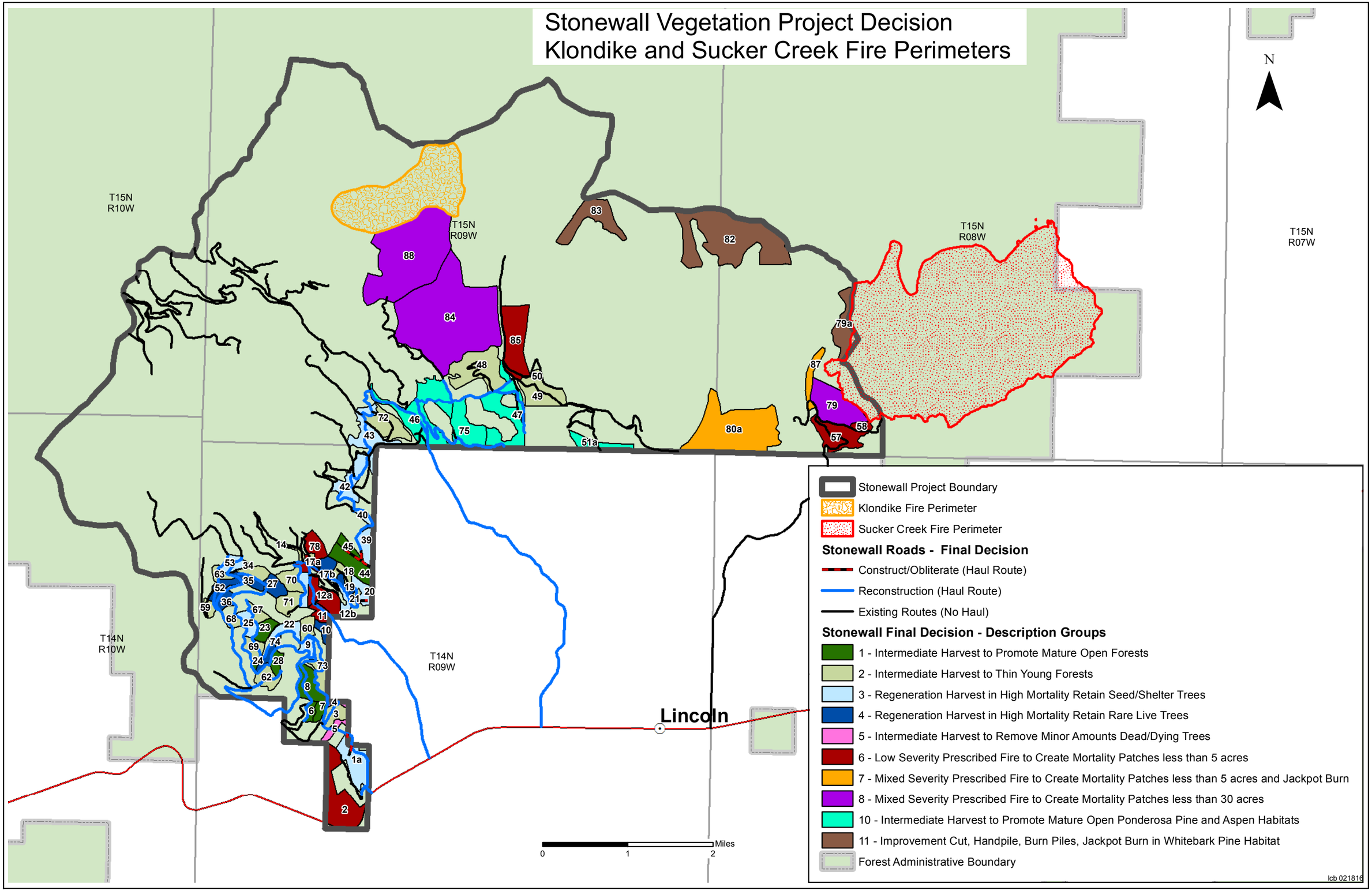


Stonewall Vegetation Project Decision
Inventoried Roadless Areas (IRA's)



Stonewall Vegetation Project Decision
Klondike and Sucker Creek Fire Perimeters