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Decision Notice and Finding of No Significant Impact

Martin Creek Resource Management Project

Flathead National Forest
Tally Lake Ranger District
Flathead County, Montana



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Summary of the Decision

This Decision Notice (DN) documents my decision to select Alternative B with some modifications, for the Martin Creek Resource Management Project. This DN includes a discussion of my rationale for choosing Alternative B with modifications, and the Finding of No Significant Impact (FONSI) that allowed me to select an EA as the appropriate level of analysis. Figure 1 shows the location of the project area in relation to the remainder of the Tally Lake Ranger District and the communities in the Flathead Valley.

I have decided to authorize commercial and non-commercial vegetation treatment methods to reduce hazardous fuel loading and improve forest stand conditions on approximately 1112 acres on National Forest System (NFS) lands. I have also decided to allow construction of approximately 3.1 miles of new permanent road, and 0.6 miles of temporary road. Temporary roads will be reclaimed following their use. Best Management Practices (BMPs) will be applied to approximately 44.0 miles of existing NFS roads. Activities associated with implementation of the fuel reduction and stand improvement treatments will yield approximately five million board feet (MMBF) of forest products.

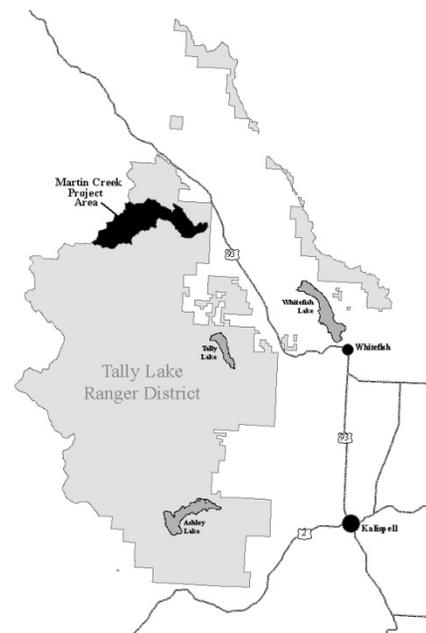
I have also decided to authorize resource enhancement projects to improve recreation opportunities, wildlife and fisheries habitat, and water quality. Additional details about this decision are contained in the *Decision* section below and *Appendix A - Selected Alternative Description*.

My decision is based on the information contained in the Martin Creek Resource Management Project EA, the supporting information in the Project Record Exhibits, and on comments received from the public and other agencies through the National Environmental Policy Act (NEPA) scoping and comment processes. Unfamiliar terms used in this Decision Notice are defined in the Glossary found in Appendix A of the Environmental Assessment (EA).

Project Area Description

The Martin Creek project area includes the area drained by Martin Creek. The area is located in the Salish Mountains on the northern end of the Tally Lake Ranger District (see Figure 1). Whitefish is the closest incorporated community, but some rural residential development is located in the Martin Creek area in the southeast portion of the project area. While the northern and eastern boundaries of the Flathead Valley are defined by steep mountain ranges, the Salish Mountains on the western boundary are more gradual and rolling, with few peaks

Figure 1. Project Area and Vicinity Map.



above 5000 feet. This less dramatic terrain has in large part determined the historical and current use and development of the area. Whereas relatively little private land exists in the more precipitous mountains around the valley, there are numerous private land holdings in the Salish Mountains, including 147 acres of private land in the Martin Creek area.

The Martin Creek Project is approximately 10,800 acres in size and is located entirely in Flathead County. The National Forest portion of this area is managed by the Tally Lake Ranger District, headquartered in Kalispell, MT. The analysis area is located entirely or partially in the following townships and sections: T32N, R25W, Sections 1-2, 10-16, and 21-24; T32N, R25W, Sections 3-6, 7-15, and 17-18; T33N, R25W, Sections 33 and 34. A map of the analysis area with prominent landscape features, such as roads and streams, is shown in Figure A-1 in Appendix A. **Activities proposed in this DN are only for implementation on NFS land.**

Structural development has occurred on private land in and around the project area, raising concerns about the risk to human life and property when wildland fire occurs. Following the 2000 fire season, Congress directed the Forest Service to identify high-risk areas, using the 2000 National Fire Plan Guidelines (USDI and USDA 2000 and 2001, Interagency Federal Wildland Fire Policy Review Working Group 1995 and 2001). The communities of the Flathead Valley have been identified as “communities at risk” from wildland fire (USDI and USDA 2001). Flathead County, in cooperation with area fire districts, land management agencies, and corporate timber land owners, responded with a county-wide fire protection plan. This plan, known as the Flathead County Community Wildfire Protection Plan (CWPP) (Exhibit O-2), defines areas where communities and other enclaves of residential development are at greatest risk from wildland fire, known as the Wildland/Urban Interface (WUI). The WUI in the Martin Creek project area encompasses the lower quarter of the Martin Creek Drainage (Exhibit O-3). The activities described in this DN are consistent with and will implement fuels reduction treatments recommended in the CWPP. This plan also highlights the need to conduct fuel reduction activities that will provide for firefighter and public safety in the area.

A more complete description of the project area can be found in Chapter 1 of the EA.

Purpose and Need

The Martin Creek Project is proposed to respond to the goals and objectives of the Flathead National Forest Land and Resource Management Plan (Forest Plan) and direction found in the Forest Service Manual. The Forest Plan provides the basis for managing the Flathead National Forest. A variety of current conditions as described above, and guidance from the Forest Plan, provide the purpose and need for management action in the Martin Creek area. The purpose of the proposed management actions are:

- Improve forest stand conditions related to Forest Plan objectives for vegetative structure and species composition.
- Reduce hazardous fuel to varying degrees across the landscape. Create and expand fuels treatments to enhance fire suppression control efforts by reducing fire intensity.
- Provide quality outdoor recreation opportunities.
- Reduce sediment and improve water quality and aquatic species habitat in project area streams and lakes.
- Provide commercial and personal-use wood products for the local economy.

Public Participation, Scoping, and Collaboration

The Council on Environmental Quality (CEQ) defines scoping as “...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 CFR 1501.7). Among other things, the scoping process is used to invite public participation, to help identify public issues, and to obtain public comment at various stages of the NEPA process.

After the *Flathead County CWPP* was consulted and an assessment of the area prepared by the Interdisciplinary (ID) Team recommended several management actions, a public involvement strategy was developed to ensure that potentially interested members of the public and other government agencies received timely information about the upcoming analysis so they may participate and collaborate in the process (Exhibit B-1). Complete details of the public involvement process can be found in the EA and the Project Record Exhibits B, C, and E; the elements of the process are summarized below:

- The Martin Creek Resource Management Project has been listed on the Flathead National Forest Schedule of Proposed Actions (SOPA) since April, 2012.
- Public mailings: several letters describing the project during the planning phase were mailed to interested members of the public, area landowners, and other agencies and organizations.
- Collaborative public meeting: Tally Lake Ranger District ID Team members hosted a public meeting at the Stillwater State Forest office in Olney to present the proposed actions and answer questions.
- Local Media: a series of legal notices and news releases have been published in area newspapers describing proposed activities and comment/collaboration opportunities.
- Content analysis: Comments generated from the Forest Service’s request for comments on the Proposed Action were analyzed to capture the full range of public viewpoints and concerns, information used to identify issues associated with the project.

A list of collaborating agencies, groups, and individuals consulted throughout the entire public participation process is in Chapter 4 of the EA. Participation with the Salish and Kootenai Tribe was conducted during quarterly meetings between tribal representatives and the Flathead National Forest Heritage Resource specialist.

Copies of the EA dated June, 2014 were sent to those individuals or groups who responded to our recent invitation to receive a copy. A legal notice appeared in the Daily Inter Lake informing the public of the availability of the EA and where they may acquire a copy. A thirty day comment period began following publication of the EA on June 18, 2014, and concluded on July 18, 2014. A copy of this legal notice was posted to our project web page within four days of publication as per 36 CFR 218 requirements. Five comment letters were received and were subjected to a content analysis process as described in Chapter 1 of the EA. Individual concerns were identified and responded to in Chapter 4 of the EA dated March, 2015.

Issues

An issue is defined as a point of discussion, debate, or dispute concerning environmental effects of an action. Issues are identified through the public involvement process and by review from other agencies and Forest Service personnel. The scoping process is used not

only to identify important environmental issues, but also to identify and eliminate issues that do not pertain to the action, narrowing the scope of the environmental documentation process accordingly. Therefore, impacts are discussed in proportion to their importance.

To identify issues specific to the Martin Creek Project, the ID Team studied public comments and information about historic and current conditions within the analysis area. They also reviewed the Forest Plan and other site-specific planning documents relevant to the Martin Creek area to further develop a list of issues. The Forest Service separated the issues into two groups: “primary” and “other.” Primary issues were defined as those directly or indirectly caused by implementing the Proposed Action. Similar issues were combined into one statement where appropriate. Other issues were identified as important and were considered in the analysis and design of the alternatives; however, they were determined not to be primary issues that would require additional alternatives. These issues are described on Page 2-3 of the EA.

The ID Team also determined quantifiable “issue indicators” to measure how each alternative responded to the primary issues. Comparison of these indicators is presented in Table 2 later in this Decision Notice.

Primary Issues:

The following issues were determined to be significant and within the scope of the project decision. These issues are addressed through the Proposed Action and its alternative.

Issue 1: Old Growth Forest: There is concern the amount of total old growth habitat in the project area is near the low point of the historic range. Some stands of timber in a late-seral condition but not meeting old growth definitions may provide old growth habitat in the near future. New temporary and permanent road construction may also affect the quality of some existing old growth habitat. In addition, there is concern that proposed stand-regeneration treatments adjacent to old growth timber stands would create an “edge effect” that would reduce the value of old growth habitat to wildlife.

Issue Indicators: Acres of late-seral forests, that appear to be moving toward old growth conditions, with proposed stand-regeneration treatments; miles of road construction through old growth habitat areas; and acres of old growth habitat affected by new abrupt edge.

Issue 2: Forested Wildlife Habitat: There is concern that several units would negatively impact wildlife species using mature forests, such as Canada lynx and northern goshawks.

Issue Indicators: Acres of potential lynx understory and sapling feeding habitats proposed for treatment, acres of potential goshawk nesting habitat proposed for regeneration harvest.

Issue 3: Forested Wildlife Connectivity: There is concern that the Proposed Action would sever or constrict forested connections in numerous places that serve as wildlife travel corridors.

Issue Indicators: Number of timber harvest units affecting forested connections between old growth habitat areas, number of timber harvest units narrowing forested riparian connectivity to 300 feet or less, number of connections between fisher habitat severed.

Issue 4: Forested Wildlife Security: There is concern that the various types, amounts, and distribution of timber harvest in the Proposed Action would reduce the area's ability to provide wildlife security over the next 15 to 30 years, particularly secure hunting season elk habitat.

Issue Indicator: Percent of analysis area in elk hunting season security area.

Brief Description of the Alternatives

I considered in detail three alternatives: Alternative A (No Action); Alternative B (Proposed Action); and Alternative C. Detailed descriptions of these alternatives can be found in Chapter 2 of the EA; they are briefly summarized below. A tabular comparison of the alternatives is found in Table 1. Those activities that were common to all action alternatives and the design details of those selected activities are located in the *Design Criteria for the Selected Alternative* section of Appendix A.

Alternative A - The No Action Alternative

This alternative proposes no vegetation or fuels treatments, recreation improvements, fisheries or watershed improvements, wildlife habitat improvements, or transportation upgrades within the Martin Creek project area. Selection of this alternative does not preclude approved activities in other areas of the National Forest at this time or from the Martin Creek project area at some time in the future. This alternative represents the existing condition against which the other alternatives are compared. This alternative does not improve existing forest stand conditions, maintain and improve terrestrial wildlife species habitat, develop outdoor recreation opportunities, or improve water quality; and provide wood products for the local economy; therefore, it will not meet the purpose and need of the project as stated earlier.

Alternative B - The Proposed Action

The Proposed Action is a series of activities developed to respond to the purpose and need for the project as described above. This alternative proposes to modify vegetation and fuels; address site specific needs for reducing sedimentation and improving water quality, terrestrial wildlife habitat and security, and recreational opportunities; and provide wood products for the local economy. Refer to Figures 2-1 and 2-2 in Chapter 2 of the EA for locations of the proposed actions.

The Proposed Action is based upon findings from ID Team members who consulted existing databases and conducted field surveys. This team included the same members who prepared the EA and are listed in Chapter 4 of that document. The ID Team individually determined several management actions are appropriate at this time. The Proposed Action was then developed through interdisciplinary consideration of resource conditions.

Alternative C

This alternative was developed to respond to the primary issues identified following the scoping of the Proposed Action (Alternative B). In particular, Alternative C modifies the Proposed Action in response to concerns with the effects on old growth and wildlife habitat. Most changes from Alternative B involved whole or partial units being eliminated because of multiple issues such as old growth recruitment, forested connectivity, lynx feeding habitat, and/or goshawk nesting habitat. For example, Units 1, 100, 101, 103, 104, and 105 were dropped because they are lynx feeding habitat. The prescription in four units (24, 25, 30, and 31) was changed from regeneration harvest to commercial thinning for forested connectivity concerns. The prescription in one unit (7) was changed from regeneration harvest to commercial thinning for recruitment old growth concerns. In two instances, unit boundaries were modified to be further away from old growth stands to reduce edge effects to this habitat. Please refer to Figures 2-3 and 2-4 in Chapter 2 of the EA for locations of the proposed treatments.

Alternative Considered but Eliminated from Detailed Study

An individual objecting to the Martin Creek Resource Management Project suggested that we analyze an alternative that educates the public about Dr. Jack Cohen's methods of fine fuels reduction and offers assistance to apply Dr. Cohen's methods on lands owned by elderly and handicapped homeowners.

Dr. Cohen's methods of fine fuel reduction are to be applied on private property immediately adjacent to structures and we are only authorized to analyze and treat National Forest System lands. We do encourage landowners to participate in the National Fire Protection Association's Firewise communities program. This program was co-sponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters to educate homeowners on how to protect their home and property from the risks of wildland fire.

Vegetation treatments within the Wildland Urban Interface (WUI) are designed to increase the likelihood of success for initial attack by providing a safe, defensible environment for firefighters. Fuel treatments in and near the WUI also serve to protect National Forest System lands from the risk of wildland fire spreading from private property. When fire enters the WUI, there remains the potential for loss of life, property, and other values even if homes have been made fire safe. Many homeowners would likely find it undesirable to live in an intensely or severely burned-over forest, even if their home has survived the passage of fire. Not only are aesthetic values decreased for most people, but the risk of flooding and landslides can put homes and lives at risk during subsequent precipitation events.

Highly ignitable homes can ignite during a wildland fire without the fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently settle on and ignite flammable home materials (such as roofs) and adjacent flammables (such as woodpiles, decking, or landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one mile or more (Cohen 2000a).

A method based solely on Dr. Cohen's fine fuel reduction method would also not reduce ladder fuels and open up crown spacing, reduce the threat of beetle killed and diseased trees, or break up fuel continuity in a way that would reduce the risk of high-severity stand-replacement wildland fire.

Therefore, an alternative based on Dr. Jack Cohen's method of fine fuel reduction would not meet the purpose and need to *reduce hazardous fuel to varying degrees across the landscape and create and expand fuels treatments to enhance fire suppression control efforts by reducing fire intensity and improve forest stand conditions related to Forest Plan objectives for vegetative structure and species composition.*

Decision

As the Responsible Official for the Flathead National Forest, I have decided to implement Alternative B as described in the Martin Creek Resource Management Project EA, with some modifications. This modified alternative is hereafter referred to as the "Selected Alternative." I selected Alternative B as the basis for the Selected Alternative because Alternative B most closely met my expectations for management of this area of National Forest System land. The Selected Alternative also includes many of the features and designs of Alternative C to ensure wildlife habitat management concerns are addressed. I have made the following modifications from Alternative B as described in the EA based upon the issues listed above, resource analysis in Chapter 3 of the EA, and comments received following release of the EA dated June, 2014. The following is a summary of modifications to Alternative B:

- The size and shape of three units in Alternative B were modified to better meet the purpose and need of the project by addressing wildlife connectivity issues.
- The size and shape of five units in Alternative B were modified to better meet the purpose and need of the project while continuing to protect multiple wildlife habitat management concerns, including connectivity, old growth habitat, riparian wildlife linkages, elk security and/or goshawk habitat.
- Road construction on one road segment is not necessary in the Selected Alternative because the vegetation treatments accessed by this segment is not a component of the Selected Alternative.

Appendix A of this Decision Notice provides a detailed description of the features and design criteria of the Selected Alternative. The table below quantitatively compares the alternatives from the EA to the Selected Alternative.

This decision also requires monitoring during and after project implementation to ensure compliance with all design criteria and determine the adequacy and effectiveness of mitigation measures. The monitoring for the Martin Creek Project will include oversight of project effects on soils, vegetation, water, wildlife, fisheries, and roads. The monitoring required by my decision is described in detail in Appendix B.

Table 1. Summary of the Features of the Alternatives.

Feature	Alternative A No Action	Alternative B Proposed Action	Alternative C	Selected Alternative
Temporary road construction	0	0.9 miles	0.6 miles	0.6 miles
Permanent road construction	0	3.1 miles	0.3 miles	3.1 miles
Road rehabilitation (BMPs)	0	44.0 miles	41.0 miles	44.0 miles
Closure of seasonally open roads	0	2.1 miles	2.5 miles	2.1 miles
Closure of yearlong open roads	0	0.8 miles	2.3 miles	0.8 miles
Timber volume estimate in MMBF	0	6	3	5
Total timber harvest acres	0	868	460	774
- Commercial Thinning	0	264	357	290
- Shelterwood	0	272	40	189
- Seed tree	0	277	63	240
- Clearcut	0	55	0	55
Timber harvest logging system				
- Ground-based tractor acres	0	679	413	655
- Skyline cable acres	0	189	47	119
Fuel reduction acres w/o timber harvest	0	564	297	338
- Precommercial thinning	0	564	297	338
Total Acres of Vegetation Management	0	1432	757	1112
Feet of new trail construction	0	150	150	150
Culvert Replacements/Upgrades	0	4	4	4
Culvert Improvements	0	5	5	5
Total Acres of Tree Planting	0	482	103	429
Acres of Shrub Planting	0	Up to 500	Up to 500	Up to 500
Acres of Shrub Slashing	0	Up to 100	Up to 100	Up to 100

Rationale for the Decision

My criteria for making a decision on this project was based on how well the management actions analyzed in the EA address the purpose and need of the project and consider the issues that were raised during the initial scoping process, the comment period, and other collaborative phases of project development. As the project decision maker, I had to weigh all potential benefits of the various alternatives against their possible impacts, and consider the suggestions and concerns from the public. The *Finding of No Significant Impact* detailed below supported the use of an EA as the appropriate level of NEPA analysis. I considered Forest Plan standards and guidance for the project area, and took into account competing interests and values of the public.

The Selected Alternative is responsive to the project's purpose and need, the resource issues described below, as well as the public concerns addressed in Chapter 4 of the EA. The features of this alternative were all site-specifically analyzed in the *Affected Environment* and *Environmental Consequences* sections presented in Chapter 3 of the EA. The amounts and

effects of activities prescribed in the Selected Alternative are all within the range of effects described in the discussions of the three alternatives presented in the EA. In addition, the Selected Alternative was evaluated by primary issues in the *Consideration of the Issues* section below. My review of the environmental consequences of the alternatives in the EA and my understanding of the Selected Alternative make me confident my resource specialists have adequately described the limits of the environmental effects and the Selected Alternative is within those limits.

Meeting the Purpose and Need

The purpose and need for action and desired conditions for the Martin Creek project area are based on Forest Plan goals, objectives, and standards. Both of the action alternatives as described in the EA respond in different ways to the purpose and need for action, and I believe the Selected Alternative best meets the purpose and need while also being responsive to the issues identified through public involvement.

I believe my decision will improve *forest stand conditions* related to Forest Plan objectives for vegetative structure and species composition. These actions will create more long-term, sustainable forest conditions by improving overall stand health. Growing space, individual tree vigor, and the ability to withstand pests and pathogens will be improved in the treated forest stands. A variety of harvesting and thinning techniques will also allow for structural diversity to be maintained. Likewise, better opportunities for shade intolerant species regeneration will result from the creation of more open stand conditions. Future stands that contain more shade intolerant species will be better adapted to survive insect, disease, and wildland fire damage.

In addition to improving forest stand conditions, *hazardous fuels will be reduced*. Following several severe wildland fire seasons, the Secretaries of Agriculture and Interior developed an interagency approach to respond to severe wildland fires, reduce their impacts on rural communities, and assure sufficient firefighting capacity in the future. Hazardous fuel reduction is one of the key points of this interagency approach, also known as the National Fire Plan. This part of the plan emphasizes management in overly dense forest vegetation that is the result of decades of fire exclusion, particularly within wildland/urban interface areas. The fuel reduction treatments involved in the Selected Alternative address these resource conditions very clearly.

My decision will reduce fuel levels on approximately 1112 acres. Manipulation of the forest structure has been shown numerous times to reduce the severity of wildland fire events (Agee 1996) and fire intensity as evidenced on the Tally Lake Ranger District. The decreased fire intensities from the effective reduction of surface and aerial fuels will enable suppression forces to have a much better chance of controlling the fires (Agee, et al. 2000). This will be the expected result with the activities proposed in this project. Trees will be removed that most contribute to ladder fuels and continuous forest canopy cover; the largest trees of more fire-tolerant species will not be removed. Ladder fuels provide an avenue for a fire to move from the ground to the forest canopy. Once a fire gets into a dense forest 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 firebrands ahead of the main fire, increasing the potential for large fire growth.

Alternative B included 226 acres of precommercial thinning in four units that were intended to help answer important research questions regarding the habitat needs of Canada lynx and snowshoe hare. This research is not being considered in the Martin Creek area at this time, so I did not include these four units in the Selected Alternative.

My decision will also improve terrestrial **wildlife species habitat and security**. Shrub planting on up to 500 acres that are proposed for timber harvest will improve forage for deer and elk while providing nesting sites for songbirds. These areas will generally be near water sources and will not conflict with reforestation objectives. Up to 100 acres in other locations will benefit from selective shrub slashing to invigorate decadent shrubs to grow more browse at levels reachable by big game while retaining nesting sites for songbirds. Wildlife security will be improved by berming approximately three miles of road, open year-round or seasonally.

The Selected Alternative will also improve **recreational opportunities** in the area by rehabilitating a user created trail. Currently a user created trail at Upper Martin Lake connects the dispersed recreation site to the lake. This trail is steep and causes erosion into the lake. Rehabilitation of the trail and construction of approximately 150 feet of system trail is proposed to reduce erosion and vegetation loss.

The Selected Alternative reduces sediment and improves **water quality and aquatic species habitat**. Currently, there are several locations on National Forest System (NFS) Road 910 between the Good Creek Road NFS Road 60 and NFS Road 910A where Martin Creek has meandered and is running up against the road. These locations will be evaluated and improved to prevent road fill material from being deposited into Martin Creek as well as protect the road from washing out in the future. Riprap and/or erosion prevention materials will be used to stabilize these areas, preventing the stream from cutting into the road fill. Four sites have also been identified for culvert replacement or upgrade. BMPs will be implemented on haul routes to minimize any potential impact the road has to water quality. There are five stream crossings causing some impact to aquatic habitat that are not on haul routes for any action alternative. These five stream crossings will also receive culvert improvements (Exhibit G-5).

My decision will provide approximately five million board feet of **wood products** as a result of the vegetation and fuels treatments. This output of the project is important to me as it complies with the primary Forest Plan land management emphasis for the area and contributes positively to the social and economic environment of local communities. Also important is the economic impact afforded by this project to the service industries that are either directly or indirectly responsible for accomplishing all the activities.

Consideration of the Issues

The Selected Alternative was designed to meet the purpose and need of the project as well as respond to issues identified following development of the Proposed Action. These issues were fully presented earlier in this document. The following paragraphs describe how the alternatives perform in relation to these issues. The table on the following page presents issue indicators to compare the quantitative response of the alternatives to the issues.

Old Growth Forest: The Selected Alternative does not include any timber harvest in existing old growth habitat or in areas suspected to be existing old growth habitat, although stand-

replacement timber harvest is proposed in some areas of mature forest that appears to be moving toward old growth habitat (Exhibits Q-7 and Q-10). The Selected Alternative was modified in response to concerns with the effects on old growth. Changes involved whole or partial units being eliminated because of issues such as old growth recruitment. The prescription in one unit (7) was changed from regeneration harvest to commercial thinning for recruitment old growth concerns. During development of the Selected Alternative, most of the units that will create high contrast edge on old growth habitat were dropped, their boundaries were pulled back from old growth stand boundaries, or they were changed to commercial thins. This decision protects and promotes old growth forests on NFS lands within the analysis area.

Forested Wildlife Habitat: The Flathead National Forest's Amendment 21 to the Forest Plan has a goal to "provide sufficient habitat to promote the recovery of threatened and endangered species and conserve the ecosystems upon which they depend." The Selected Alternative was modified to ensure adherence with this amendment; it is also consistent with the National Forest Management Act (NFMA) diversity requirements for wildlife. Forest Plan Amendment 21 also named all sensitive wildlife species as Management Indicator Species, several of which represent the spectrum of old growth habitats on the Flathead National Forest (Exhibit Rg-2). These are the bald eagle, flammulated owl, boreal owl, black-backed woodpecker, fisher, and Canada lynx. Conditions favorable to these species will generally also benefit other old-growth associated species found within the Martin/Radnor Wildlife Analysis Area. These species were used to evaluate forested wildlife habitat as conditions favorable to these species will generally also benefit other old-growth associated species found within the Martin/Radnor Wildlife Analysis Area. The Selected Alternative was modified to better meet the goals of the Forest Plan and with consideration for the sensitive species within the area. Although the Martin Creek Project will affect some areas of lynx foraging habitat, it is consistent with standards in the Northern Rockies Lynx Management Direction. In addition, it will not result in destruction of critical lynx habitat, nor impede movement through matrix habitat. The selected alternative will not alter physical or biological features that will appreciably reduce the conservation value of critical habitat for lynx. All Primary Constituent Elements (PCEs) (See chapter 3 of the EA Table 3-79) will remain abundant and well distributed across the Martin Stillwater Lynx Analysis Unit (LAU) and across Critical Habitat Unit 3 before, during, and after implementation of all alternatives. I believe that by choosing the Selected Alternative, I can best meet the purpose and need for the project while minimizing effects to forested wildlife habitat.

Forested Wildlife Connectivity: This issue is measured by the number of forested connections severed by vegetation and fuels treatments in riparian areas, along ridgelines, and between patches of old growth habitat. Changing silvicultural prescriptions or dropping whole or partial units during the development of the Selected Alternative addressed a few of the concerns about forested connectivity (Exhibits Rg-7 and Rs-8). The Selected Alternative will also include leaving larger-diameter snag and downed-wood "legacy material" as required by the Forest Plan's Amendment 21 which will also improve the ability for recovering stands to provide connectivity. The Selected Alternative is consistent with all Forest Plan direction relevant to wildlife connectivity, including Forest Plan Amendment 21 and the Northern Rockies Lynx Management Direction (Exhibits Q-10 and Rt-10).

Table 2. Response of Alternatives to the Issues.

Issue and Issue Indicator	Alternative A No Action	Alternative B Proposed Action	Alternative C	Selected Alternative
#1. Old Growth Forest				
<ul style="list-style-type: none"> Acres of late-seral forest that appear to be moving towards old growth habitat with stand regeneration treatments. 	0	103	12	48
<ul style="list-style-type: none"> Miles of road construction through old growth habitat areas. 	0	0.2	0.0	0.2
<ul style="list-style-type: none"> Acres of old growth habitat affected by adjacent new abrupt edge. 	0	79	23	40
#2. Forested Wildlife Habitat				
<ul style="list-style-type: none"> Acres of lynx understory and sapling feeding habitats proposed for treatment. 	0	573	314	345
<ul style="list-style-type: none"> Acres of potential goshawk nesting habitat proposed regeneration harvest. 	0	310	24	218
#3. Forested Wildlife Connectivity				
<ul style="list-style-type: none"> Number of timber harvest units affecting forested connections between old growth habitat. 	0	8	0	7
<ul style="list-style-type: none"> Number of timber harvest units narrowing forested riparian connectivity to 300 feet or less. 	0	3	0	3
<ul style="list-style-type: none"> Number of connections between fisher habitat severed. 	0	4	0	2
#4. Forested Wildlife Security				
<ul style="list-style-type: none"> Percent of analysis area in elk hunting season security area. 	33.6%	32.0%	35.4%	32.1%

Forested Wildlife Connectivity: This issue is measured by the number of forested connections severed by vegetation and fuels treatments in riparian areas, along ridgelines, and between patches of old growth habitat. Changing silvicultural prescriptions or dropping whole or partial units during the development of the Selected Alternative addressed a few of the concerns about forested connectivity (Exhibits Rg-7 and Rs-8). The Selected Alternative will also include leaving larger-diameter snag and downed-wood “legacy material” as required by the Forest Plan's Amendment 21 which will also improve the ability for recovering stands to

provide connectivity. The Selected Alternative is consistent with all Forest Plan direction relevant to wildlife connectivity, including Forest Plan Amendment 21 and the Northern Rockies Lynx Management Direction (Exhibits Q-10 and Rt-10).

Forested Wildlife Security: Timber harvest in the Selected Alternative will reduce elk security area by about 1.5 percent (about 415 acres). Although it will be limited somewhat by the locations of open roads and natural permanent openings, the available elk hunting season security area is also expected to increase over the next 15 to 30 years, as most of the harvested stands will have regrown hiding cover (Exhibit Rb-3).

Comparison of the Alternatives

Of the three alternatives presented in the EA, I believe Alternative B, with modifications, best meets many of the purpose and need objectives of the project while responding to the issues considered above.

I did not select Alternative C. However, I decided to modify Alternative B by incorporating elements of Alternative C to lessen the impacts to wildlife habitat, security, and old growth. The size of three units (11, 28, and 39) were reduced to reduce effects on forested connectivity; five additional units were either decreased (1, 10, and 22) or eliminated (21 and 33) in response to concerns regarding old growth habitat, riparian wildlife linkages, elk security and/or goshawk habitat. Please refer to Figure A-1 and Figure A-2 for locations of the selected units. With the Selected Alternative, fewer acres will be treated for improving stand conditions and fuels reduction using timber harvest; with an associated reduction in the amount of timber volume being offered for sale. However, essentially the same amount of culvert upgrades/improvements, BMPs applied to existing roadways, precommercial thinning (without the research units), shrub planting, shrub slashing, and recreation improvements will take place.

I did not select the No Action Alternative (Alternative A) because I believe the purpose and need, as identified in this project, reflects important management concerns that should not be ignored. Benefits to forest stand conditions, wildlife habitat, recreation opportunities, water quality, and aquatic species habitat would be foregone if I had chosen Alternative A. The no action alternative does not help to address one of the resource goals of the forest plan (page II-5) which is to “provide a predictable and sustainable supply of timber products that is responsive to local industry and economies, consistent with other Forest management goals, objectives, and standards.” If I chose Alternative A, I would be ignoring the recommendations of the *Flathead County Community Wildfire Fuels Reduction/Mitigation Plan* and the risk of severe stand-replacing fire will increase as long as these stand conditions persisted. Inaction will mean forest canopies within the project area will continue to become denser and more closed in; individual trees will become more susceptible to insects, disease, and wildland fire; and surface and ladder fuels will continue to accumulate. I believe the No Action Alternative does not reflect wise management of these National Forest System lands.

Summary

Overall, I conclude that the Alternative B modified best meets the purpose and need of the project while protecting the environment. I have selected this alternative with its associated design features as described in Appendix A for implementation.

My decision is based on a review of the EA and project record exhibits that shows a thorough evaluation of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. The *Literature Cited* section of the EA is comprehensive and contains many recent publications. Exhibit V-3 discusses literature referenced in comment letters and how they were or were not used in the analysis; and the Chapter 3 resource sections contain numerous discussions of uncertainty and risk involved in the analysis.

Finding of No Significant Impact

In accordance with CFR 1508.13 and direction provided in the Forest Service Handbook (FSH 1909.15, Chapter 40, Section 43.1), I have determined that the management actions included in the Selected Alternative of the Martin Creek Resource Management Project do not constitute a major federal action, and that the implementation of the proposal will not significantly affect the quality of the human environment. Accordingly, I have determined that an Environmental Impact Statement need not be prepared for this project. I have followed the implementing regulation for NEPA (40 CFR 1508.27) and other criteria for determining the significance of effects.

Before making my determination, I carefully reviewed and considered the following information:

- The direct, indirect, and cumulative effects of these actions as documented in the Environmental Assessment for the Martin Creek Resource Management Project;
- The analysis documentation in the Project Record of the Martin Creek Resource Management Project;
- Comments received throughout the public comment periods for this proposal; and,
- Past experiences with resource management projects on the Flathead National Forest.

The ID Team and I have screened the management actions included in the Martin Creek Resource Management Project for *significant impacts*. The results of this screening are summarized on the following pages.

Significant, as used in NEPA, requires consideration of both context and intensity.

Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance will usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR 1508.27).

The effects of the proposed actions are limited in context. The project area is limited in size (1112 acres of vegetation and fuels treatments spread out over a 10,800 acre watershed drainage) and the activities limited in duration (management actions associated with the proposal will be completed within a four to eight year time frame). Effects are local in nature and are not likely to significantly affect regional or national resources.

Some of the treatment units are located near private property and homes. As such, the forest land surrounding these private lands will be affected by this proposal. The people most

affected by the project will be the local residents on the nearby lands. This action is also a continuation of fuels and thinning projects that have occurred for many years on the Flathead National Forest and elsewhere across the Northern Region and the nation as a whole. Short-term adverse effects are addressed through implementation of the Standards and Guidelines in the Forest Plan for the Flathead National Forest, Best Management Practices, and the Design Criteria in Appendix A developed specifically for this project.

The project Design Criteria minimize and avoid adverse impacts to the extent that such impacts are almost undetectable and immeasurable, even at the local level. These Design Criteria include, but are not limited to, protection of riparian habitat, seasonal and operational restrictions to avoid impacts to wildlife populations and habitat; protection of sensitive or threatened plant species if located; protection of heritage resources; protection of the soil resource; reclamation of temporary roads; and noxious weed abatement.

Within the context of the landscape as a whole, or at the stand level, the ecological consequences are not found to be significant in either the short or long-term for the Martin Creek Resource Management Project.

Intensity refers to the severity of impact. Responsible Officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following ten aspects are considered in the evaluation of intensity (40 CFR 1508.27):

1. *Impacts may be both beneficial and adverse. A significant effect may exist even if the balance of effects will be beneficial.*

Both beneficial and adverse effects have been taken into consideration when making a determination of significance for this project. While there will be beneficial effects, this action does not rely on those effects to balance adverse environmental impacts. The individual resource sections in Chapter 3 of the EA and the supporting information in the Project Record contain comprehensive effects analyses, and the findings from these resource-specific reports form the basis for my decision.

The project includes a range of activities including timber harvest, thinning, prescribed burning, road construction, and hazardous fuels reduction. These activities have varying effects on the physical, biological, or social components of the affected environment. Some of these effects are more favorable to a particular resource component than to another resource component. Below is a synopsis of the more notable effects of the activities; however, none of the effects, whether favorable or unfavorable, beneficial or adverse, are significant.

The Selected Alternative will decrease the proportion of lodgepole pine and shade tolerant species and increase the shade intolerant mix (Douglas-fir and western larch) on approximately three to five percent of the Martin Creek area. This will increase both species and age class diversity in the stand and across the landscape. Diversity at these scales improves the resilience of the forest, its ability to adapt and respond in a variety of ways to inevitable future disturbances, such as wildland fire, without experiencing wide-scale detrimental effects. The Selected Alternative will reduce the amount of high canopy cover and increase moderate and low canopy cover on about five percent of NFS lands in the Martin Creek area. Reducing canopy cover will create more open forest stands and landscapes; reduce competition for light, water, and nutrients for residual vegetation; and allow shade intolerant species to

become or remain more dominant in the stands. All alternatives provide a diversity of stand densities across the landscape. Related changes in stand conditions (increased vigor, reduced stress, increased tolerance to mountain pine beetle) will increase long-term timber productivity as well.

Beneficial and adverse effects to grizzly bears and Canada lynx are discussed under the ninth intensity factor below.

Thinning treatments will allow more room for individual trees to grow, increasing their vigor, lowering their stress, and therefore improving tree and forest health and resistance to deleterious effects of pathogens through time. By creating the desired stand conditions, we are more assured that forests will be resilient, adaptable, and sustainable over time, providing for the full array of ecosystem functions and processes.

Riparian values for all watersheds including: water temperature; filtration of sediment and contaminants; large woody debris recruitment; and stream bank condition will be maintained because of the application of Riparian Habitat Conservation Area standards. No timber harvests in riparian habitat are proposed for the Selected Alternative.

The temporary and permanent road construction and culvert upgrade and improvement portions of this project have the highest risk of impacting fish habitat and water quality in the short-term due to the risk of sediment being deposited into streams. However, short-term impacts will be reduced through timing restrictions, dewatering and re-routing the stream at each site, and applying proven Best Management Practices. There will be long-term benefits due to drainage improvements, road improvements, and because the likelihood of culvert failures will be reduced.

I recognize non-native invasive plant species are present in the project area. These weeds displace native vegetation and disrupt natural processes. Management activities prescribed in this Decision Notice have the potential to create conditions conducive to weed spread. Design Criteria described in Appendix A (such as: pre-treatment of timber haul routes that have existing populations of weeds; use of native grasses for erosion control; and on-site washing of off-road equipment) will limit the spread of new weeds. The application of the integrated weed management approach in the Flathead National Forest Noxious and Invasive Weed Control EA and Decision Notice (May, 2001) has proven effective in controlling weed populations across the Forest. This approach will be applied in the Martin Creek project area before, during, and after the implementation of the activities described in Appendix A.

It is my determination, based on review of these analyses and consultation with specialists, that the Selected Alternative, including commercial and non-commercial vegetation and fuels treatments, burning of thinning slash and natural forest fuels, and temporary and permanent road construction, will not have a significant impact on the environment. All effects will be minimal or short-lived. No effects are deemed irreversible or irretrievable and do not set in motion further effects. All potential direct, indirect, and cumulative effects are evaluated in the EA, Project Record reports, and the Biological Assessments and Evaluations.

2. The degree to which the proposed action affects public health or safety.

The vegetation and fuel reduction treatments are designed to increase the efficiency of fire suppression efforts and reduce risks to firefighters, local residents, the public, structures, and

natural resources. The implementation of these treatments will result in improved community safety because the fuel reduction activities will increase the chance of suppressing the fire before it reaches private property.

All burning of thinning slash and natural fuels will comply with State Air Quality Standards and be coordinated through the Montana Airshed Group. Dust from timber hauling activities will be controlled on Forest Service roads using the dust abatement requirements within the stewardship/timber sale contract provisions.

Herbicide treatments of weeds will comply with label directions and in accordance with and under decision authority of the Flathead National Forest Noxious and Invasive Weed Control EA and Decision Notice (Exhibit A-3), to which the Martin Creek Resource Management Project EA and this DN is consistent.

Project design features have been developed to address public safety concerns associated with the proposed harvest and associated actions. I believe that the actions in the Selected Alternative will not likely have any significant impact to public health or safety.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

The project area does not contain and is not near areas that have been identified as ecologically critical or otherwise unique for the geographic area. Heritage surveys have been completed and no previously undiscovered sites within the project area boundaries were found. The project area includes wetlands, but impacts to wetlands will be avoided during project layout and under contract provisions for vegetation treatments.

Based on this information, I conclude that the Selected Alternative will have no effects on unique resources.

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

Based on the limited context of the project within the scope of the human environment, my review of comments received during the scoping of this project, the analysis documented in the EA and Project Record, and the rationale described in this DN, I do not find any highly controversial effects as a result of implementation of the Selected Alternative. The activities prescribed in the Selected Alternative have been designed to minimize the effects on the quality of the human environment and are therefore not highly controversial.

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

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

Based on my review of comments received during the scoping of this project, the comments received after the publication of the EA, and the analysis documented in the EA and Project

Record, I find the possible effects on the human environment that are uncertain or involve unique or unknown risks are minimal or non-existent.

Given the familiar nature of the trees and lesser vegetation to be removed and the large proportion of the vegetation in the drainage to be left (see Table 3-12 of the EA), the effects to the quality of the human environment are not significant. The agency has considerable experience with such projects in these landscape conditions and the consequences of such actions are well established and predictable.

The EA and information contained in the project record discloses potential environmental impacts (which are supportable with use of accepted techniques, reliable data, and professional opinion) and I believe that the impacts of implementing this proposal are within the limits that avoid any thresholds of concern. It is my conclusion that there are no uncertain or unique characteristics in the project area that have not been previously encountered or that will constitute an unknown risk to the human environment.

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

The Martin Creek Resource Management Project represents a site-specific project that does not set precedence for future actions nor does it present a decision in principle about future considerations. Any proposed future projects must be evaluated on its own merits and effects. The actions in the Selected Alternative are compatible with the Forest Plan and the capabilities of the land. I believe that this action does not represent a decision in principle about a future consideration.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*

Connected, cumulative, and similar actions have been considered and included in the scope of the analysis. The analysis accounts for past, present, and reasonably foreseeable actions of the Forest Service, private timber companies, and private landowners within and surrounding the project area. Based on my review of the analysis and disclosure of effects in the EA, Biological Assessments and Evaluations, and other analyses in the Project Record, I conclude that the Martin Creek Resource Management Project does not represent potential cumulative adverse impacts (please refer to Table 3-1 of the EA, Chapter 3 resource sections, and individual resource cumulative effects worksheets in the Project Record).

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

I am not aware of any features in the affected area that are listed or are being considered for listing on the National Register of Historic Places. There are two recorded cultural sites in the Martin Creek area. Both are historic period sites. None are considered eligible for listing on the National Register of Historic Place. Heritage surveys have been completed in the Martin Creek Resource Management Project area and no previously undiscovered sites within the

project area boundaries were found (Chapter 3 pages 3-263 to 3-266 in the EA and Exhibit K-4). The potential for impacting undiscovered sites is mitigated by compliance with Forest Plan standards and guidelines, and through the design criteria included as part of the Selected Alternative (Appendix A). In the event such resources are discovered during project implementation, they will be evaluated and protected. I believe the implementation of the Selected Alternative will neither directly nor indirectly affect cultural resources because there will be no change to the integrity of important cultural resources as a result of avoidance or mitigation of activities in the vicinity of heritage resources.

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

Biological Assessments (BAs) for threatened species have been completed for the proposal. These BAs and supporting documentation led to the determinations for listed species in Table 3. This project will not significantly adversely affect threatened species or their habitat. No endangered species occur on the Flathead National Forest.

Table 3. Threatened Species Determinations for Species Listed by the USFWS as Occurring in the Area (as documented January 8, 2015; Exhibit Rt-1).

Species	Determination	Project Record Exhibit
Grizzly Bear	May affect, not likely to adversely affect grizzly bears	Exhibits Rg-1, Rt-2, Rt-3, Rt-4, Rt-5, Rt-6, and Rt-13
Canada Lynx	May affect, likely to adversely affect Canada Lynx and Canada Lynx Critical Habitat	Exhibits Rg-1, Rt-2, Rt-3, Rt-4, Rt-6, Rt-8, Rt-9, Rt-10, Rt-15, and Rt-20
Bull Trout	No effect to Bull Trout and Bull Trout Critical Habitat	Exhibit G-11
Water Howellia	No effect	Exhibit S-2
Spalding's Catchfly	No effect	Exhibit S-2

A determination of “may affect, not likely to adversely affect” was made for the grizzly bear for the Martin Creek project. The USFWS reviewed the Biological Assessment and supplemental information for the Martin Creek project in 2014 (Exhibits Rt-2 and Rt-4) and concurred (Exhibit Rt-3). This determination was made primarily because the timber harvest and construction of permanent road in the selected alternative will affect cover used by large mammals such as grizzlies and their prey, and activities could cause short-term displacement of bears from the immediate area. There will be no increase in public motorized access and the Selected Alternative is not expected to have any direct, indirect, or cumulative effects to grizzly bear denning habitat or high quality food sources. The USFWS acknowledged that all “Forest personnel and contractors would adhere to the NCDE food storage order, thus reducing the potential for human-grizzly bear conflicts” and summarized that “the effects to grizzly bears as a result of the proposed action would be insignificant and/or discountable.”

A determination of “may affect, likely to adversely affect” was made for the Canada lynx for the Martin Creek project (Exhibit Rt-4). This determination was made largely because timber harvest and precommercial thinning will affect lynx feeding habitat, most of which is in the Wildland Urban Interface. As noted by the USFWS, the Project will treat approximately 266

acres of sapling forage habitat “using the exemptions from amendment standard VEG S5 in the WUI for fuels reduction” and 7 acres of multistory lynx foraging habitat in the WUI to be treated “as part of the fuels reduction using the exemptions from standard VEG S6”. In addition, actions could cause temporary disturbance to lynx, with possible temporary displacement from the immediate area. However, seeding, tree and shrub planting, and shrub slashing will enhance habitat values for a variety of species preyed upon by lynx. Because this project will construct two permanent (system) roads that will cross a ridgeline, one of which will be in a minor saddle, it will not fully meet Guideline HU G7 of the NRLMD. These roads could not be constructed without crossing the ridgeline and no alternate route is possible for reaching several vegetation management units. The locations of both crossings minimize impact on forested connections and old growth habitats. No permanent roads or trails will be built in areas important for lynx connectivity or close to forested stringers. Proposed management is consistent with all standards and other guidelines of the NRLMD (USDA Forest Service 2007; Exhibits Rt-3, Rt-4, Rt-10, and Rt-15).

On March 23, 2007, the USFWS issued a Biological Opinion on the effects of the Northern Rocky Mountains Lynx Amendment on the Distinct Population Segment of Canada lynx in the contiguous United States (Exhibit Rt-9). In the Forest Plan lynx amendment, a limited range of fuel or timber management projects that will be conducted within the wildland urban interface and limited precommercial thinning for other resource benefits fell under exemptions and exceptions from amendment standards VEG S1, S2, S5, and S6. In this first-tier Biological Opinion, the USFWS analyzed the effects of such projects on lynx and also provided an incidental take statement for these activities because the Forest Service provided explicit estimates on the number of acres that will be impacted under the exemptions and exceptions. The USFWS reviewed the Martin Creek Project Biological Assessment and in this second-tier consultation found that the effects of the project on Canada lynx “are consistent with the first tier programmatic biological opinion and do not result in additional effects that were not considered in the first tier programmatic Biological Opinion” (Exhibits Rt-3 and Rt-9). In addition, the USFWS found that the Martin Creek Resource Management Project is “not likely to jeopardize the continued existence of Canada lynx” (Exhibit Rt-3).

A determination of “may affect, likely to adversely affect” was also made for the Martin Creek project for critical habitat designated for the Canada lynx (Exhibits Rt-4 and Rt-20). The USFWS agreed that the project will not directly or indirectly alter critical habitat “to the extent that the conservation role for the species (i.e. to support viable core area lynx populations) will be diminished” and that the project “is not likely to adversely modify critical habitat” (Exhibit Rt-3). Important considerations regarding this project and lynx critical habitat include:

- All Primary Constituent Elements (PCEs) will remain abundant and well distributed across the Lower and Upper Martin LAUs and across Critical Habitat Unit 3 before, during, and after implementation (Exhibits Rt-15 and Rt-20).
- The area providing for PCE 1a (presence of snowshoe hares and their habitats) and PCE 1c (denning habitat) that will be affected is less than one percent of critical habitat across the Martin Stillwater LAU.
- PCE 1b (deep fluffy snows) will not be affected except for snow plowing to access two or possibly three timber harvest units.
- PCE 1d (matrix habitat) will still support the ability of lynx to travel within their home range.

- The project will not result in destruction of critical lynx habitat nor will it impede movement through matrix habitat.

10. Whether the action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment.

As described in the EA (*Regulatory Framework and Consistency* sections for each resource area in Chapter 3), the actions in the Selected Alternative are consistent with all applicable Federal, state, or local laws or requirements imposed for the protection of the environment, including:

- The National Forest Management Act (NFMA)
- The National Environmental Policy Act (NEPA)
- The Endangered Species Act
- The Clean Water Act and Montana State Water Quality Standards
- The Clean Air Act
- The Migratory Bird Treaty Act
- The National Historic Preservation Act
- The American Graves Protection and Repatriation Act
- American Indian Religious Freedom Act
- The Environmental Justice Act

I have concluded that the Selected Alternative is consistent with Forest Plan direction and does not violate any Federal, state, or local laws or requirements imposed for the protection of the environment.

Findings Required by Law, Regulation, and Agency Policy

The Martin Creek Resource Management Project EA addressed the regulatory framework and regulatory consistency by resource area. I have determined that my decision is consistent with the laws, regulations, and policies related to this project. The analysis leading to my decision was developed within the framework of the following laws, regulations, and policies.

The National Forest Management Act (NFMA)

Consistency with Forest Plan Standards, Goals, and Objectives

The Flathead National Forest Land and Resource Management Plan of 1986 (Forest Plan) establishes management direction for the Flathead National Forest. This management direction is achieved through the establishment of Forest-wide goals and objectives, standards, and guidelines. Additional goals and accompanying standards and guidelines have been established for specific Management Areas across the Forest. Project implementation consistent with this direction is the process in which desired conditions described by the Forest Plan are achieved. The National Forest Management Act requires that all project-level resource plans, such as this DN, are to be consistent with the Forest Plan (16 USC 1604(i)). The EA displays the Forest Plan and Management Area goals and objectives and the standards and guidelines applicable to the Martin Creek project area (Appendix B of the EA). The alternative development process is detailed in Chapter 2 of the EA and in the Project Record, while the management goals of the alternatives and the environmental consequences of the alternatives

in relation to the Forest Plan standards and guidelines are described in Chapter 3 of the EA. After reviewing the EA, I find that my decision is consistent with Forest Plan standards, goals, and objectives as amended.

On April 9, 2012, the Department of Agriculture issued a final planning rule for National Forest System land management planning (referred to as the 2012 Rule, found in the Federal Register at 77 FR 68 [21162-21276]). None of the requirements of the 2012 Rule apply to projects and activities on the Flathead National Forest, as our Forest Plan was developed under a prior planning rule (36 CFR §219.17(c)).

Project-Specific Amendments to the Forest Plan. The Forest Plan states on page II-20, “A project-specific amendment of a Forest Plan standard may be undertaken if it is demonstrated during project analysis that it will fulfill the objective of the standard and related goals.” There are no project-specific amendments to the Forest Plan necessary with this decision.

Suitability for Timber Production

The NFMA directs that no timber harvest, other than salvage sales or sales to protect other multiple-use values, shall occur on lands not suited for timber production. Stands proposed for harvest treatment in the project area were examined for suitability in accordance with NFMA. Inclusions of non-suitable land were identified within stands proposed for commercial harvest (such as wet areas), and no treatment will occur in these areas. All of the selected commercial vegetation treatments are located in a Management Area (MA) 15, suitable for long-term timber production, as described in the Forest Plan.

Timber Harvest on National Forest Lands

The NFMA directs that site-specific projects and activities to harvest timber on National Forest System lands can only occur where:

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

My decision avoids irreversibly damaging soil, slopes, or other watershed conditions. This determination is supported by the effects disclosures in the EA (Chapter 3 *Aquatic Resources* and *Soils* sections) and Project Record (Exhibits G and H), through Design Criteria (Appendix A of this DN), and through the application of BMPs (Exhibit G-12). Several units will be monitored to see if proposed activities exceed the Region One Soil Quality Standards. If there is 15 percent or more detrimental disturbance in a particular harvest area after implementing the decision, restoration activities described in the Design Criteria in Appendix A will occur to move the area back towards an improved condition.

b) There is assurance that the lands can be adequately restocked within five years after final regeneration harvest.

The Selected Alternative includes 429 acres of tree planting and natural regeneration is expected to occur in harvest units not planted; monitoring will occur in all harvest units to ensure stocking. Forest Plan Monitoring Reports indicate the Flathead National Forest is consistently successful at regenerating stands after harvest in the desired timeframe and with the desired number and species of trees (Exhibit P-8). The Forest Plan monitoring report, Item #39, indicates the forest is very successful at regenerating stands after harvest, with stands certified stocked an average of 2.9 years after harvest (Exhibit P-8). Since 1968,

approximately 2443 acres regenerated naturally, 137 acres were seeded, and about 1196 acres were planted within the Martin Creek area (Exhibit P-12). There are no regeneration failures and all stands meet the reforestation objectives by progressing toward certified stocked.

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

Upon review of the Martin Creek EA, I find that the timber harvest activities associated with the decision will comply with applicable Clean Water Act and Montana State Water Quality standards and the standards and guidelines of the Flathead Forest Plan. As documented in the EA, *Aquatic Resources* section, timber harvest will not adversely affect water conditions or fish habitat. Application of BMPs and riparian buffers will protect water resources from harvest activities.

d) The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber.

My decision to implement the Martin Creek Resource Management Project is based on a variety of reasons as discussed elsewhere in this Decision Notice. Economics was only one of the many factors I considered in making my decision; the decision is not based primarily on the greatest dollar return, but rather reducing hazardous fuels and changing forest stand conditions to best meet Forest Plan objectives.

Clearcutting and Even-aged Management

The NFMA directs that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method on National Forest System lands only where:

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.

The Selected Alternative includes regeneration harvest, where clearcutting occurs in one unit totaling 55 acres. I have determined that the seed tree, shelterwood, and clearcutting methods are the optimum regeneration harvest methods for those units identified in Table A-2 of Appendix A. Desired stand and landscape conditions were developed using Forest Plan goals and objectives as well as input from the public and contemporary concepts in sustaining forest and aquatic ecosystems. Western larch, Douglas-fir, ponderosa pine, and western white pine are the desired species in the future stands. The effects of implementing this harvest method are described in the EA in the Vegetation section of Chapter 3. Project Record Exhibit P contains further documentation of the silvicultural diagnosis process and analysis.

Timber stands within the area have evolved within a fire-dependent ecosystem. Within the Martin Creek project area, Forest Plan objectives and requirements related to vegetation management are most clearly achieved through the use of even-aged management systems and, on some sites, through the use of intermediate systems. Even-aged systems such as seed tree, shelterwood, and clearcut methods are part of the Selected Alternative.

Silvicultural site-specific prescriptions for the Martin Creek Resource Management Project have been prepared by a certified silviculturist and reviewed by the ID Team members. Target stand conditions were developed based on management objectives and site characteristics. The prescriptions considered existing stand conditions, the target stands, and resource constraints in determining the biological and technological feasibility of all silvicultural systems, including uneven-aged systems, and their appropriateness for the site.

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.

Full interdisciplinary review has been completed for this project. The information presented in the Project Record regarding transportation and harvesting requirements indicates that implementation of my decision is feasible and practical (Exhibits M, N, and P). Many of the individual activities included in the economic analysis in Table 3-103 of the EA will be paid for using non-timber sale funds, thus making the project more economically feasible. Economic feasibility is also determined by market conditions, which are currently improving compared to when the analysis was completed. Implementation of the project will not require significant investments in roads, since most road construction is taking place on existing road templates. Logging of similarly situated areas has demonstrated the feasibility and practicality of this type of vegetative treatment. All proposed treatments meet a portion of the multiple use goals and objectives in the Flathead Forest Plan for designated Management Areas.

c. Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain.

A scenery analysis was completed for the Martin Creek harvest units and is presented in Chapter 3 of the EA. In the short term, implementation of the Selected Alternative will create changes to the visual condition of the project area. Openings in the canopy of various sizes resulting from seed tree and shelterwood harvests may be visible. Treatments utilizing the commercial thin and sapling thin methods will be less evident. It was found that the new timber harvest proposals in this project will not however cumulatively create a departure from the established Scenic Integrity Level (SIL) of the Martin Creek Project area as direct and indirect impacts are so limited.

d. Cuts are carried out according to the maximum size limit requirements 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 R1 supplement 2400-2001-2 2471.1, 16 USC 1604(g)(3)(F)(iv)).

FSM 2471.1 of the Northern Region clarifies and describes the restrictions on the size of harvest openings created by even-aged silvicultural methods (clearcut, seedtree and shelterwood harvests), as required by FSM 1921.12. Proposed even-aged silvicultural methods will create four openings of 43 to 90 acres where larch, ponderosa pine, Douglas-fir, and white pine will be planted, will naturally regenerate, or are already regenerated. The units are located to: maintain a diverse pattern of forest structures across the Martin Creek landscape; increase or maintain the size of the patches on NFS lands to more closely resemble the historic fire-maintained conditions; allow for more effective fire suppression over the next several decades. Exceeding the 40-acre limit was approved by the Regional Forester in

January, 2012 (Exhibit P-15). All other harvest activities in my decision meet the maximum size limitations.

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.

The information provided in the Project Record documents that the vegetative management treatments included in my decision will achieve the desired forest vegetation conditions described in the silvicultural reports (Exhibit P). All sites considered for treatment will use established harvesting and fuel reduction methods. After reviewing the social and environmental effects of the alternatives, I have determined that my decision is consistent with Forest Plan direction for the management of natural resources, including soil, water quality/quantity, wildlife and fish habitat, recreation uses, aesthetic values, and other resource yields.

Stands of Trees are Harvested According to Requirements for Culmination of Mean Annual Increment (CMAI) of Growth

Harvest is occurring on habitat types and in management areas considered suitable for vegetation and timber management. The stands proposed for regeneration treatment are beyond CMAI of growth, and are losing volume to insects, disease, and windthrow. My decision meets the requirements as stated.

Roads

The NFMA requires that the necessity for 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" [36 CFR 219.27(10)]. The NFMA 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 to exceed 10 years ...unless the road is determined a necessary permanent addition to the National Forest Transportation System" [36 CFR 219.27(11)].

Management actions associated with the Martin Creek Resource Management Project include construction of approximately 3.1 miles of specified permanent roads and approximately 0.6 miles of temporary roads which will be constructed and reclaimed after their use and will be revegetated within ten years. The 3.1 miles of system road construction was determined necessary from landscape-level transportation planning that considered future management access needs. Based on these actions and analyses, I believe that we have met the intent of 36 CFR 219.27(10) and (11). Additional information regarding the road network in the analysis area can be found in the Travel Analysis (Exhibit M-1).

NFMA Diversity

Following the direction in the Forest Plan will ensure the diversity of wildlife, fisheries, and plant habitat is maintained over time across the Flathead National Forest. Based upon the Martin Creek Resource Management Project actions being consistent with this direction, I conclude that my decision poses little risk to the diversity of native species. My conclusion is based on a review of the Environmental Assessment, the Project Record, analyses of effects of the Martin Creek Resource Management Project at the Forest and Regional Scale (Exhibits Rg-1 and F-7), and the Biological Assessments, Biological Evaluations, and the U.S. Fish and Wildlife Service Biological Opinion that show a thorough evaluation was made of relevant

scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

Best Available Science

My decision is based upon the consideration of the best available science. This science is thoroughly discussed throughout the EA, in the Response to Comments, and in the Project File documentation.

The National Environmental Policy Act (NEPA)

National Environmental Policy Act provisions have been followed as required by 40 CFR 1500. The Martin Creek Resource Management Project Decision Notice complies with the intent and requirements of NEPA.

Scoping for the project's proposed action included a public meeting, a mailing that provided information about the project and solicitation for comments, a legal notice, and a public review period. Issues identified during the initial scoping for the Martin Creek Resource Management Project assisted the ID Team and me in project design, alternative development, and with the analysis process. The publication and dissemination of the Martin Creek Environmental Assessment provided interested members of the public with an opportunity to review the details of the analysis and provide comments and concerns that informed my decision. Exhibit B contains public involvement documentation; Exhibit C contains news media articles; Exhibit D contains materials used to develop alternatives; and Exhibit E contains the comments received on this project. Chapter 4 of the EA dated March, 2015 provides my responses to concerns identified during the review of the EA dated June, 2014. This DN describes the decisions I have made and my rationale for making the decisions.

Clean Water Act and Montana State Water Quality Standards

Upon review of the EA and Project Record, I find that activities associated with my decision will comply with State water quality standards. My decision includes project Design Criteria and measures to protect the water resource (Appendix A of this DN) and applicable BMPs (Exhibit G-12) to achieve water quality standards. Inland Native Fish Strategy Riparian Habitat Conservation Areas (RHCAs) will be established along all wetlands and stream courses that are in or adjacent to treatment areas.

Clean Air Act

After reviewing the EA and Project Record, I find that the activities to be implemented will be coordinated to meet the requirements of the State Implementation Plans, the Smoke Management Plan, and Federal Air Quality requirements.

Endangered Species Act

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. Upon review of the Biological Assessments for wildlife,

plants, and fish for the Martin Creek Resource Management Project (Exhibits Rt-4, F-1, and S-2), I find that the project meets the requirements of the Endangered Species Act. The USFWS concurred with the project's "may affect, not likely to adversely affect" determination for grizzly bears (Exhibit Rt-3). For Canada lynx, the USFWS concluded that the Martin Creek Project is consistent with the first-tier biological opinion for the 2007 Northern Rockies Lynx Management Direction (Exhibits Rt-3 and Rt-9). Additionally, the USFWS determined that the Martin Creek Resource Management Project is not likely to jeopardize the continued existence of Canada lynx (Exhibit Rt-3). The USFWS prepared a biological opinion for designated critical habitat for Canada lynx (Exhibit Rt-3), concluding that the project will have "small to insignificant and nonpermanent effects on the critical habitat unit". In addition, the USFWS found that the project "would not directly or indirectly alter critical habitat in Unit 3 to the extent that the conservation role for the species (i.e. to support viable core area lynx populations) would be diminished" (Exhibit Rt-3).

Migratory Bird Treaty Act

On January 10, 2001, President Clinton signed an Executive Order outlining responsibilities of Federal agencies to protect migratory birds under the Migratory Bird Treaty Act of 1918. Upon review of the information provided in the EA (pages 3-183 to 3-192), Exhibit Rn, the Terrestrial Biological Evaluation for the Martin Creek Resource Management Project (Exhibit Rs-3), and the document "Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities" (Exhibit Rg-1), I find that my decision complies with this Executive Order.

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

Based upon the analysis in the EA (pages 3-263 to 3-266), and material in the Project Record (Exhibit K), no impact on cultural resources is expected by implementation of the Martin Creek Resource Management Project.

Recognizing that the potential exists for unidentified sites to be encountered and disturbed during project activity, a special provision (B6.24#) for their protection will be included in all contracts used to implement this project. This provision allows the Forest Service to unilaterally modify or cancel a contract to protect cultural resources regardless of when they are identified. I have determined that my decision to implement the Martin Creek Resource Management Project complies with the Region One programmatic agreement (1995), with the State Historic Preservation Office, and with the Advisory Council on Historic Preservation.

Government to Government Relations

The Forest Service has consulted with the Confederated Salish and Kootenai tribes during the analysis process (scoping and comment periods). The intent of this consultation has been to remain informed about Tribal concerns regarding the American Indian Religious Freedom Act and other tribal issues. In addition, the tribes have rights under the Hellgate Treaty of 1855, including hunting, gathering, and grazing rights. The Federal government has trust responsibilities to tribes under a government-to-government relationship to insure that the

tribe's reserved rights are protected. Consultation with the tribes through project planning helps insure that these responsibilities are met.

Environmental Justice (Executive Order 12898)

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires that Federal agencies make achieving environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high adverse human health and environmental effects of their programs, policies, and activities on minority populations and low-income populations. I conclude that the risk of such disproportionate effects on minority or low-income populations from this action is very low. My decision does not pose any significant socio-economic risks that disproportionately affect low income or minority populations in communities where timber producing employment opportunities and workers are located. The implementation of the Martin Creek Resource Management Project will not cause a significant change in local employment or revenue sharing with local communities. Thus, this decision should not disproportionately affect low-income or minority populations and communities.

Compliance with Other Laws, Regulations, and Policies

Compliance with other laws, regulations, and policies are listed in various sections of the Project Record, the Forest Plan, and the EA (primarily in the *Regulatory Framework and Consistency* discussions at the end of the resource sections of Chapter 3).

Objection Review

The Draft Decision Notice and Finding of No Significant Impact was issued on March 12, 2015, which was subject to the objection process pursuant to 36 CFR 218. The 45-day objection period commenced with the publication of a legal notice in the Daily Inter Lake on March 12, 2015. Dick Artley and Cottonwood Environmental Law Center objected to the project.

The Regional Forester's staff reviewed the objections, EA, Draft DN/FONSI, and contents of the project file. On June 9, 2015, the Acting Regional Forester determined the project to be in compliance with all laws, regulation, policies, and the Forest Plan, and that all of the Objector's concerns and suggested remedies did not require further discussion. In his determination, the Acting Regional Forester instructed the Forest to address the following three items prior to signing a final DN/FONSI:

1. Include in the final Decision Notice discussion under *Alternatives Considered but Eliminated from Detailed Study* explaining why an alternative that would have educated the public about Dr. Cohen's methods would not meet the purpose and need for action.

Action taken: A discussion on an alternative based on Dr. Cohen's methods was added in the section above titled *Alternatives Considered but Eliminated from Detailed Study*.

2. Include in an errata to the final EA a summary of the analysis conducted in Project File Document Rt-06 documenting the direct, indirect, and cumulative effects of over-snow travel and snowplowing to lynx critical habitat.

Action taken: An errata to the final EA regarding the direct, indirect, and cumulative effects of over-snow travel and snowplowing to lynx critical habitat has be sent to all individuals that requested a copy of the EA or DN/FONSI for this project. The errata is also available on our webpage at:

<http://www.fs.usda.gov/projects/flathead/landmanagement/projects>.

3. Discuss in the errata to the final EA, a consideration of the relevant factors used to determine the appropriate cumulative effects analysis area to be used for lynx critical habitat.

Action taken: An errata to the final EA regarding how the appropriate cumulative effects analysis area to be used for lynx critical habitat has be sent to all individuals that requested a copy of the EA or DN/FONSI for this project. The errata is also available on our webpage at:

<http://www.fs.usda.gov/projects/flathead/landmanagement/projects>.

Contact Person

For further information on this decision, contact Tami MacKenzie, Project Team Leader, Tally Lake Ranger District, 650 Wolfpack Way, Kalispell, MT 59901, (406) 758-3528, tlmackenzie@fs.fed.us.

Signature and Date

CHIP WEBER
Forest Supervisor
Flathead National Forest

Date

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Appendix A

Selected Alternative Description

The Selected Alternative responds to the goals and objectives of the Flathead National Forest Land and Resource Management Plan. The Selected Alternative was designed to improve forest stand conditions related to vegetative structure and species composition, reduce hazardous fuels, create and expand fuel reduction zones to enhance fire suppression control, provide quality outdoor recreation opportunities, reduce sediment and improve water quality and aquatic species habitat in project area streams and lakes, and provide wood products for the local economy.

As stated earlier in this Decision Notice, I have selected an alternative that is a modification of Alternative B in response to the need for providing old growth forest and other forest wildlife habitat, forested wildlife connectivity, and forested wildlife security. The following is a description of this Selected Alternative. A project monitoring plan follows in Appendix B. Please refer to Figures A-1 and A-2 for locations of the proposed treatments.

Vegetation and Fuels Treatments

Several types of prescriptions are proposed to meet the objectives that were described in the purpose and need statements in Chapter 1 of the EA. The four general categories of commercial prescriptions are commercial thin, shelterwood, seed tree, and clearcut. The one category of non-commercial prescription is sapling or precommercial thin. The retention level or average number of trees retained in each treatment method is shown in Table A-1, below, and described in detail in the Chapter 3 *Vegetation* section of the EA. The estimated trees per acre and canopy cover to be retained are expressed in ranges for each treatment method. Canopy cover is an estimate of the percent of the ground surface that will remain beneath the tree branches after treatment.

The proposed treatment for each unit was determined based upon the current structure and species composition of trees and the desired future conditions for the stand. Retention will emphasize the most fire, insect, and disease tolerant trees, typically the larger western larch and Douglas-fir.

Under the Selected Alternative, approximately 774 acres of commercial harvest will occur in 26 units. Commercial harvest activity consists of 290 acres of commercial thinning, 189 acres of shelterwood, 240 acres of seed tree, and 55 acres of clearcut. A total of approximately 338 acres of non-commercial activity will occur consisting of precommercial thinning in areas that have been previously harvested. The Selected Alternative was designed with no commercial vegetation management in areas that are verified or suspected old growth or within riparian landtypes. Tables A-2 through A-3 displays the acreage and treatment specifics for each unit.

Table A-1. Key to Treatment Categories in the Unit Table.

Stand Level Vegetation/Fuel Treatment Type	Retention Description	
	Trees per acre	Canopy Cover
Commercial Thin (CT)	50 to 150 pole to large trees per acre	30-70% (avg 40%)
Shelterwood (SW)	10-40 medium to large trees per acre	10-30%
Seed Tree (ST)	5-20 medium to large trees per acre.	5-10%
Clearcut (CC)	0 to 10 medium to large trees per acre	<5%
Precommercial Thin	200 to 400 saplings per acre (some units also have scattered pole to large trees)	5-40%

Selected vegetation and fuels treatments will use a variety of silvicultural methods:

Commercial thinning in pole-sized and larger stands will select the healthiest leave trees with large, well-formed crowns. Leave tree selection will favor shade-intolerant and fire-resistant species, especially western larch. These trees will then have more growing space, light, nutrients, and water to allow them to develop into large overstory trees with improved insect, disease, and fire resistance. Commercially thinned stands generally do not require reforestation.

Shelterwood, seed tree, and clearcutting treatments have the intention of creating a new forest. These harvest methods will change the stands from large and medium tree structure classes to the seedling stage. The tree species composition will also change. Each of these methods retain some of the larger trees from the previous stand; with the shelterwood method retaining the most and the clearcutting method retaining the least.

Precommercial thinning, also called sapling thinning, will occur on 12 units that are currently growing high densities of sapling to pole sized trees (10 to 25 feet tall). These areas are located in past timber harvested units. The precommercial thinning will be accomplished using hand tools. Slash created during the thinning operations will be piled in areas that are in close proximity to private property or to augment existing fuel breaks.

Table A-2. Selected Alternative Commercial Harvest Units.

Unit Number	Acres	Treatment ¹ Method	Logging ² System	Site Prep / Slash Treatment Method ³	Reforestation ⁴ Method
1	7	ST	Tractor	WTY	Plant
7	26	CT	Tractor	WTY	N/A
9	103	CT	Tractor	WTY	N/A
10	59	SW	Tractor	Excavator	Plant
11	23	SW	Skyline	WTY	Plant
13	28	ST	Tractor	Excavator	Plant
14	40	ST	Tractor	WTY	Plant
16	49	ST	Skyline	WTY	Plant
17	42	ST	Tractor	Excavator	Plant
18	55	CC	Tractor	WTY	Natural
22	28	SW	Skyline	WTY	Plant

Unit Number	Acres	Treatment ¹ Method	Logging ² System	Site Prep / Slash Treatment Method ³	Reforestation ⁴ Method
23	12	SW	Tractor	Excavator	Plant
24	48	SW	Tractor	Excavator	Plant
25	6	SW	Skyline	WTY	Plant
27	6	ST	Skyline	WTY	Plant
28	12	ST	Tractor	WTY	Plant
30	7	SW	Skyline	Excavator	Plant
31	6	SW	Tractor	Excavator	Plant
37	14	ST	Tractor	Excavator	Plant
38	12	ST	Tractor	Excavator	Plant
39	30	ST	Tractor	WTY	Plant
43	60	CT	Tractor	WTY	N/A
49	36	CT	Tractor	WTY	N/A
55	14	CT	Tractor	WTY	N/A
59	34	CT	Tractor	WTY	N/A
60	17	CT	Tractor	WTY	N/A
Total	774				

¹Treatment Method—ST=Seed Tree, SW=Shelterwood, CT=Commercial Thin, CC=Clear Cut.

²Logging System—Tractor=ground-based equipment, Skyline=cable equipment.

³Slash Treatment—Excavator=slash will be piled using mechanical equipment such as an excavator; WTY=Whole Tree Yarding and pile at landing.

⁴Reforestation—Natural=allow natural regeneration; Plant=plant larch, Douglas-fir, ponderosa pine, and/or white pine; N/A=no additional stocking needed.

Table A-3. Selected Alternative Precommercial Thinning with Fuel Reduction.

Unit Number	Acres	Treatment ¹ Category	Thinning Method	Slash Treatment ² Method
100	48	WUI	Hand	Hand Pile
101	114	WUI	Hand	Hand Pile
103	28	WUI	Hand	Hand Pile
104	24	WUI	Hand	Hand Pile
105	36	WUI	Hand	Hand Pile
134	17	WUI	Hand	Lop and Scatter
135	12	WP	Hand	Lop and Scatter
136	16	WP	Hand	Lop and Scatter
137	2	WP	Hand	Lop and Scatter
138	26	WP	Hand	Lop and Scatter
139	7	WP	Hand	Lop and Scatter
140	8	WP	Hand	Lop and Scatter
Total	338			

¹Treatment Category—WUI = Thinning proposed in the Wildland Urban Interface. WP = thinning proposed outside the WUI for the purpose of promoting western white pine regeneration. No more than 20 percent of the area of competing vegetation in these stands will be treated.

²Slash Treatment—Hand Pile = hand pile entire unit, Lop and Scatter = cut thinned trees in to small pieces and scatter evenly on the ground.

Transportation Management

Two new permanent system road segments will be constructed under this alternative for an estimated total of 3.1 miles (Table A-5). Construction of these permanent roads will allow

vehicle access to areas of the national forest for this proposed action as well as potential projects in the future. These roads will not be open to public wheeled motorized use but will be available to over-the-snow vehicles December 1 through May 14 annually.

Three temporary road segments totaling 0.6 miles will be required to access some of the units; these temporary roads will be reclaimed following their use (see Temporary Roads section under Design Criteria for the Selected Alternative later in this appendix for a description of road reclamation). See Table A-4 and Figure A-1 for details of each road segment.

An estimated 44.0 miles of existing roads potentially used for timber hauling will be evaluated and if necessary have drainage features improved to meet Best Management Practices (BMPs). Please see Exhibit G-12 for a description of BMPs and a determination of their effectiveness.

Table A-4. Selected Alternative Temporary Road Construction.

Temporary Road Segment Number	Temporary Road Type	Approximate Miles of Temporary Road	Units Accessed by Temporary Road
A*	New	0.3	7
B	New	0.1	60
F	New	0.2	30, 31
		Total: 0.6	

*Road Segment A is partially located in the Ketowke Creek drainage (approximately an additional 0.3 miles) outside of the Martin Creek analysis area. This segment will only be constructed after environmental effects analysis at some future time in the Ketowke Creek drainage determines the construction of this segment will have acceptable environmental effects.

Table A-5. Selected Alternative Permanent Road Construction.

Permanent Road Segment Number	Approximate Miles of Permanent Road	Units Accessed by Permanent Road
H	1.1	9, 10, 11
I	1.9	9, 13, 14, 16, 17, 18
	Total: 3.1	

Recreation Improvement Proposals

A user created trail at Upper Martin Lake currently connects the dispersed recreation site to the lake. This user created trail is steep and causing erosion into the lake. Rehabilitation of the user created trail and construction of approximately 150 feet of system trail is proposed to reduce erosion and vegetation loss.

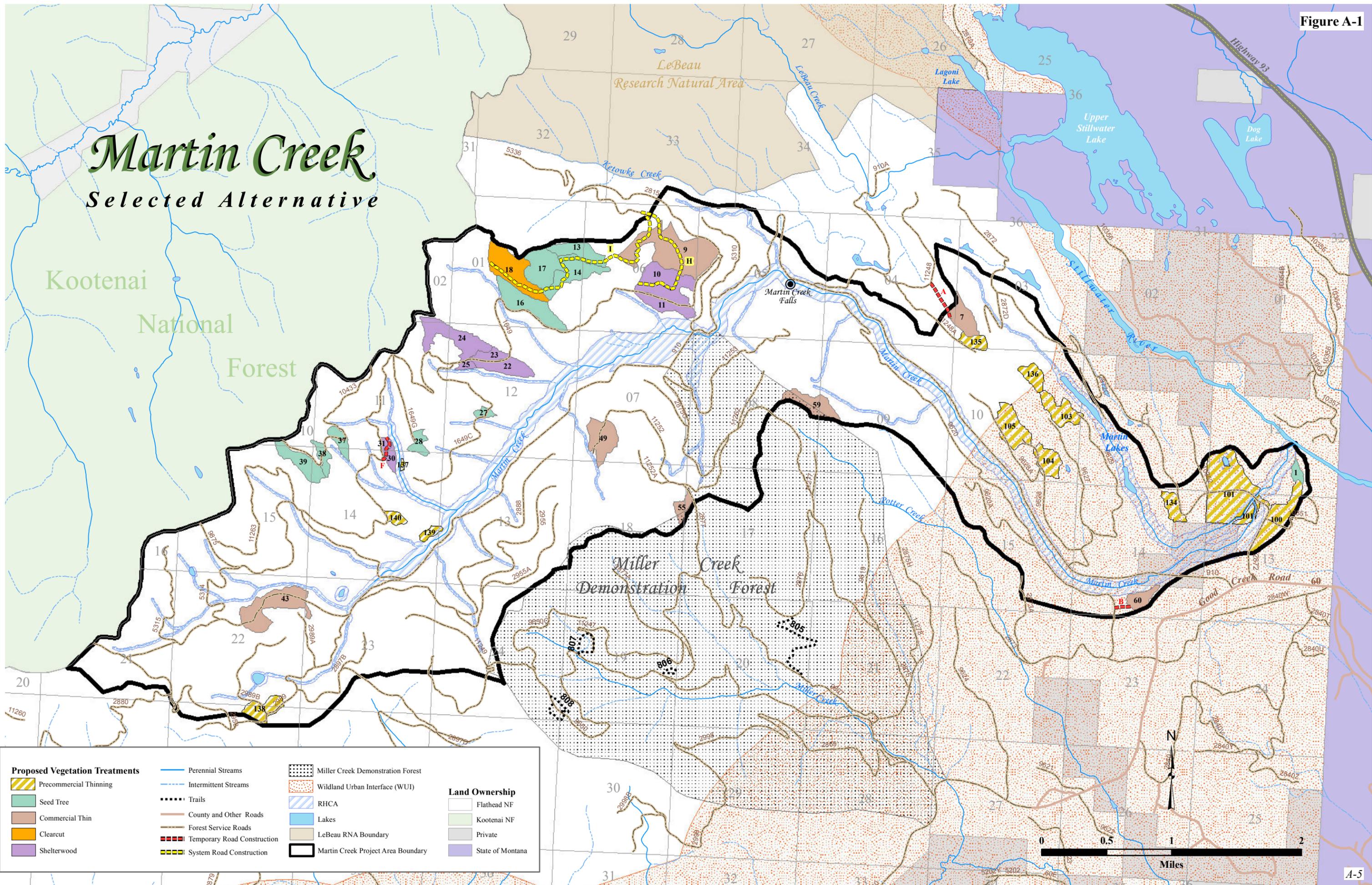
Martin Creek

Selected Alternative

Kootenai
National
Forest

LeBeau
Research Natural Area

Miller
Creek
Demonstration
Forest



Proposed Vegetation Treatments	Perennial Streams	Miller Creek Demonstration Forest
Precommercial Thinning	Intermittent Streams	Wildland Urban Interface (WUI)
Seed Tree	Trails	RHCA
Commercial Thin	County and Other Roads	Lakes
Clearcut	Forest Service Roads	LeBeau RNA Boundary
Shelterwood	Temporary Road Construction	Martin Creek Project Area Boundary
	System Road Construction	Land Ownership
		Flathead NF
		Kootenai NF
		Private
		State of Montana

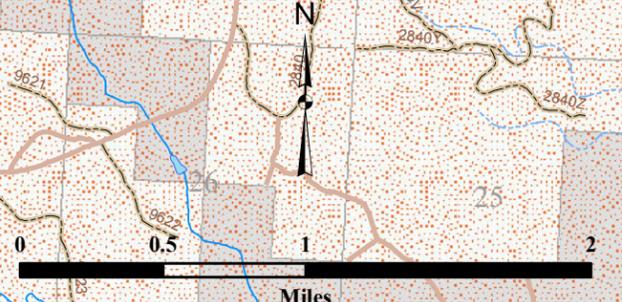
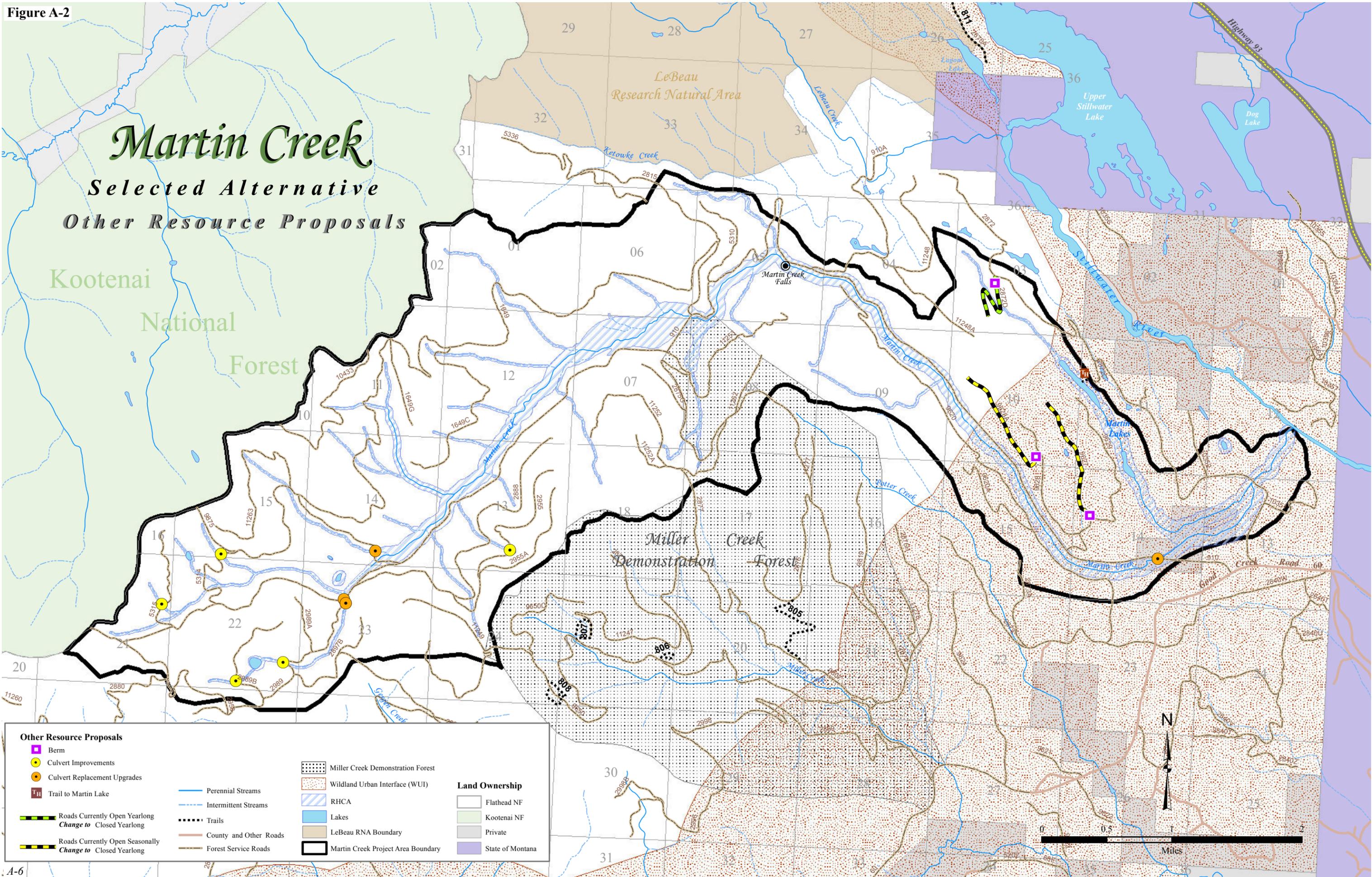


Figure A-2

Martin Creek

Selected Alternative

Other Resource Proposals



Other Resource Proposals

- Berm
- Culvert Improvements
- Culvert Replacement Upgrades
- Trail to Martin Lake
- Roads Currently Open Yearlong
Change to Closed Yearlong
- Roads Currently Open Seasonally
Change to Closed Yearlong

- Perennial Streams
- Intermittent Streams
- Trails
- County and Other Roads
- Forest Service Roads

- Miller Creek Demonstration Forest
- Wildland Urban Interface (WUI)
- RHCA
- Lakes
- LeBeau RNA Boundary
- Martin Creek Project Area Boundary

Land Ownership

- Flathead NF
- Kootenai NF
- Private
- State of Montana

Aquatic Habitat and Water Quality Improvements

Currently, there are several locations on the NFS Road 910 between the Good Creek Road (NFS Road 60) and NFS Road 910A where Martin Creek has meandered and is running up against the road. These locations will be evaluated and improved to prevent road fill material from being deposited into Martin Creek as well as protect the road from washing out in the future. Riprap and/or erosion prevention materials will be used to stabilize these areas, preventing the stream from cutting into the road fill.

Four sites have been identified for culvert replacement or upgrade. One site is located where the Martin Creek Road (NFS Road 910) first crosses Martin Creek. Currently, there are two 48" pipes that are undersized. These pipes will be replaced with one new pipe that is designed to pass the 100 year storm event as required by the Forest Plan. While the pipes are not currently fish barriers, fish habitat and aquatic passage will be greatly improved. The remaining three are located in the upper reaches of Martin Creek and its tributaries (see Figure 2-2). These streams do not have fish but the culverts are too small and at risk for failure in a big runoff year. These culverts will be replaced with larger culverts designed to pass the 100 year storm event. The four culvert replacements will take place when the streams are at their low water point, typically during August or September. Please refer to Exhibit G-5 for a list of these culverts.

BMPs will be implemented on haul routes to minimize any potential impact the road has to water quality. There are five stream crossings causing some impact to aquatic habitat that are not on haul routes for any action alternative. These five stream crossings will receive culvert improvements anyway. Activities will include clearing the inlet of the culvert, blading ditches and installing drive-through drain dips. Please refer to Exhibit G-5 for a list and location of these five stream crossings.

Wildlife Habitat Enhancement

Shrub planting on up to 500 acres that are proposed for timber harvest will improve forage for deer and elk while providing nesting sites for songbirds. These areas will generally be near water sources and will not conflict with reforestation objectives. Up to 100 acres in other locations will benefit from selective shrub slashing to invigorate decadent shrubs to grow more browse at levels reachable by big game while retaining nesting sites for songbirds. Wildlife security will be improved by closing (with a berm) three road segments yearlong to wheeled, motorized vehicles. These three segments total approximately three miles in length. Roads 9627 and 9628A are currently open seasonally. Road 2872D is currently open yearlong. These access changes are displayed in Figure A-2.

Design Criteria for the Selected Alternative

The Forest Service requires protective measures specific to a land management project be employed during implementation. These specific protective criteria are designed during the planning phase of a project and updated as the alternatives are developed and modified. Broad management direction is taken from the Northern Regional Guide (USDA Forest Service 1983). Additional direction comes from applicable Forest Service manuals and

handbooks and the Forest Plan. The following features have been incorporated as design criteria in the Selected Alternative.

Timing of Activities

Vegetation and fuel treatment activities will be carried out beginning in approximately 2015 and continuing approximately four years. Other activities such as drainage improvements could begin immediately following the approval of an action alternative. Individual temporary roads will be constructed and reclaimed within three years.

Soils

To minimize detrimental impacts to the soil resource, all road construction, reconstruction, timber harvest, and fuels reduction will be completed using BMPs or Soil and Water Conservation Practices (SWCPs). The practices are described in detail in the Forest Service Soil and Water Conservation Handbook (FSH 2509.22), the Soil Management Handbook (FSH 2509.18), and the Forest Plan (pages II: 49-55). BMPs include practices such as providing for sufficient road drainage, limiting tractor logging operations to periods when soils are dry and less subject to compaction, seeding of landings and cut-and-fill slopes of roads, and maintaining undisturbed vegetation strips between cutting units and streams for sediment filtration. Each harvest unit and the proposed roadwork will be reviewed and applicable SWCPs identified on a site-specific basis for protection of the soil and water resource. These practices are listed and described for the activities described in the alternative at Exhibit G-12.

Harvest Activities

All mechanized units that remove commercial products will be logged using designated skid trails. Equipment will occasionally leave the trails to access trees or accomplish other activities. Skid trail spacing width must average at least 75 feet in all summer tractor harvest units. The goal is to occupy less than 15 percent of the treatment area, which includes soil disturbance from skid trails, temporary roads, and landings associated with either past or proposed activities.

Require winter logging in units 11 and 59 and cut-to-length/forwarder or winter logging in units 10 and 60 to reduce potential unacceptable levels of detrimental soil disturbance. Winter logging requires that there be enough snow to prevent muddy water from mixing into the snow where equipment operates. This will require about ten inches of snow. The depth of snow varies with the snow conditions. It takes more dry powder snow than wet dense snow to protect the soil surface. Soils must be frozen enough to prevent deformation of the soil surface where equipment operates.

All activity areas currently have less than 15 percent detrimental soil disturbance. If post-implementation monitoring in Units 10, 11, 59 and 60 indicates that detrimental soil disturbance levels exceed 15 percent of the activity area, then all or a portion of the following actions will be used to begin the restoration of soil quality. Restoration activities will be focused on areas with high amounts of detrimental soil disturbance such as landings and designated skid trails.

- Scarification with excavator teeth to a depth of two to four inches.
- Seeding with the native plant mix as specified by the Forest Botanist.

- Planting native shrubs/trees to augment natural vegetation and scarification.
- Placement of slash and/or woody material on site.

Site condition will be used to determine which of the above mitigations will be used. These mitigations do not result in immediate restoration of detrimentally disturbed soils; rather they begin the restoration process.

All existing roads and skid trails will be reused to the extent feasible unless doing so will adversely affect soil, water or other resources. If roads or trails cannot be reused, their extent must be considered when laying out additional skid trails.

Logging will occur when soils are drier than field capacity as determined by the hand feel method (Exhibit H-20).

Sale administrators will monitor soil moisture conditions prior to allowing equipment to begin operations in summer (Exhibit H-20). This monitoring must be documented in the Timber Sale Daily Report.

All mechanical fuel reduction will be accomplished with excavators. Excavators will, to the extent feasible, remain on skid trails.

Prescribed burning prescriptions will be prepared and implemented for all pile burning treatments.

Temporary Roads

All newly constructed temporary roads will be reclaimed after timber harvest is completed or as soon as logistically practical. The reclamation of new temporary roads will include re-contouring the entire road template to the natural ground contour and, to the extent feasible, placing the top soil back on the soil surface and revegetating the disturbed area with native grasses, shrubs, and trees.

Wildlife

Non-Game Wildlife Habitat

Amendment 21 of the Forest Plan specifies the minimum number of snags, snag replacement trees, and pieces of downed wood to be left in each potential vegetation group (PVG). Although the minimum diameters are not always present in a given stand, these components will be retained to meet or exceed the intent of the Forest Plan under all alternatives wherever they exist (Exhibits Q-10 and Rd-5). To provide for these snag and downed wood retention needs, as well as living tree canopy and large trees, the following will be prescribed:

- Retain the following standing unless leaving them will a) compromise safety, b) conflict with objectives for recreation management, or c) allow dwarf mistletoe, root disease, or bark beetles to increase to unacceptable levels:
 - All dead Douglas-fir, western larch, and ponderosa pine 12 inches and greater diameter breast height (DBH),
 - All live ponderosa pine seven inches and greater DBH,
 - All live larch 18 inches and greater DBH,

- All live Douglas-fir 25 inches and greater DBH, and
 - All live or dead black cottonwood, quaking aspen, and paper birch.
- Girdling dwarf mistletoe infected larch may be used to retain these trees as snags.
- Leave on site as downed wood all snags greater than nine inches DBH that are felled for safety concerns.
 - Wherever present, leave at least 32 downed logs per acre that are 9 to 20 inches in diameter and at least 20 feet long, distributed across the units as evenly as possible. If there are too few large enough logs, substitute logs six to nine inches in diameter to reach this number of pieces.
 - Wherever present, leave at least 15 downed logs per acre greater than 20 inches in diameter and at least six feet long, distributed across the units.
 - Leave some slash piles unburned in units, as described in Exhibit Rd-6.

Wildlife Security

Hunting, transporting of hunters, and transporting of game will be prohibited by timber, road building, or other contract workers while working on or off roads closed to motorized vehicle use by the general public.

Personal use firewood gathering will not be allowed by contractors or other workers on newly constructed roads or any other roads not open to motorized use by the general public.

All newly constructed roads will be closed by sign or gate to public motorized use during and after road building and other activities. All existing roads currently closed to public motorized use will remain closed during implementation of all proposed activities.

Big Game Habitat Enhancement

Shrub planting to improve habitat for big game and other species may occur on up to 500 acres, typically in or near some of the harvest units. Shrub planting will usually consist of willow, serviceberry, red-osier dogwood, mountain maple, or redstem ceanothus at a density of about 100 to 300 plants per acre. Shrub planting will typically take place in areas with light and/or moderate tree retention where sufficient soil moisture and light will assure survival and most often near riparian areas.

Threatened, Endangered, and Sensitive Wildlife

If any of the following are found within or close to any vegetation management unit or road location, operations within that unit or on that road will cease until the wildlife biologist is notified, and activities are modified if necessary:

- Active denning sites used by grizzly bears, wolves, lynx, fishers, or wolverines,
- Active nesting sites used by bald eagles, northern goshawks, black-backed woodpeckers, or flammulated owls, and
- Active rendezvous (pup rearing) sites used by wolves.

All contractors and others implementing the project will be required to comply with a food-storage and sanitation order.

Water Quality

BMPs are practices applied to minimize non-point source water pollution from forest practices, as well as protect watershed, fisheries, riparian, and soil resource values. The measures described in the Streamside Management Zone Act (SMZ-1993, also referred to as Montana House Bill 731) and applied to this project will protect all perennial and intermittent streams flowing adjacent to treatment units and are included in contract clauses.

Rehabilitation of drainage features on system roads (BMPs) as described in Exhibit G-12 will be implemented on system roads used for log haul. Additional culvert replacement may occur as opportunities are identified during project implementation.

Fisheries

The proposed units will be consistent with the guidelines and standards of the Inland Native Fish Strategy Environmental Assessment and its July 1995 Decision Notice (USDA Forest Service 1995c). No commercial timber harvest will take place within Riparian Habitat Conservation Areas (RHCA). RHCAs are defined as 300 feet from either side of fish bearing streams, 150 feet from perennial streams, 50 feet from intermittent streams and wetlands less than one acre, and 150 feet from lakes or large wetlands. Precommercial thinning in two units adjacent to RHCAs will also include some activity with the RHCAs. These two units are 101 and 139. Thinning will halt at 50 feet from the stream and no activity will take place immediately adjacent to the stream. Precommercial thinning within RHCAs will be conducted by hand crews only.

All new culverts and bridges installed or replaced on system roads will be designed to pass up to 100 year flow events, including during haul route BMP implementation. Installation of large culverts or bridges will greatly minimize the potential for the structure to fail during severe storms, runoffs, and debris flows; and also adequately pass all aquatic organisms at all life stages. Work will take place only during low flow, typically July through September. Stream water will be temporarily diverted through a pipe or channel during installation to minimize turbidity. As the water is returned to the channel, it will take place gradually over several hours to further minimize turbidity.

Air Quality

The primary air quality concerns associated with forest management activities is dust from unpaved roads and smoke from both wildland and prescribed fire. State Implementation Plans (SIPs) are developed to implement the provisions of the Clean Air Act. Prescribed burning requires a permit from the Montana DEQ and the burn must be implemented within the regulatory framework. This includes daily approval from the Flathead County Air Quality hotline and the Montana/Idaho Airshed Group. For a more specific discussion of air quality, see the *Air Quality* section of Chapter 3 of the EA.

Vegetation

Timber Harvest

In units to be naturally regenerated, phenotypically superior leave trees will be selected whenever possible to increase the likelihood of leaving superior genotypes as seed sources. In all units, the largest trees will be favored to leave; harvest prescriptions will include minimum diameter limits for western larch, ponderosa pine, and Douglas-fir, as described above in the wildlife part of this section. All hardwoods will be retained, unless they compromise safety. Some small understory trees, either individually or in clusters, will also be left in harvest units to provide for vertical diversity in the stand to the extent possible without compromising fuel reduction objectives.

Precommercial Thinning (Sapling Thinning)

Precommercial thinning is proposed in stands with a western white pine component (units 135-140). In those stands, thinning will be to specifically create space or “daylight” around planted, blister rust resistant white pine trees and no thinning will occur in parts of the stands without white pine. No more than 20 percent of the area in these stands will be treated.

Up to half of the shrubs in the precommercial thinning units may be cut where they have become decadent and difficult for wildlife to browse.

Fuels Reduction

Prescribed fire management plans (burn plans) are written for each individual prescribed burn and include plans for ignition, holding, escaped fire contingency, mop-up, and patrol to ensure that each burn meets the objectives prescribed for that particular area. The plan is designed to use the prescribed weather, personnel, and equipment that are needed to control the burn within the identified boundaries.

In some commercial timber harvest units, sub-merchantable will be felled or “slashed” and subsequently piled and burned in order to reduce the amount of ladder fuels in the residual stand. As noted above, some understory trees will be retained to provide vertical diversity.

Invasive Species

Invasion and spread of invasive species is a concern in the analysis area. New cut and fill slopes will be seeded with a certified weed-free grass species mix for erosion control and to prevent establishment of invasive species. Native grass seed is highly recommended; however, desirable (short-lived and non-invasive) non-native species may be used.

During project implementation, logging, site preparation, and road reclamation equipment used in the area will be washed to remove invasive species. This action is consistent with recommendations in *An Evaluation of Noxious Weeds in the Lolo, Bitterroot, and Flathead Forests* (Losensky 1987, FSM 2080, and USDA Forest Service 1995). When practical, commercial timber harvest units that have been determined to be free of invasive plants should be logged first using in-woods equipment that were washed before coming onto the national forest. Subsequent equipment moves from areas containing invasive plants to those areas that do not should consider an intermediate washing. Roadside clearing should be limited to retain as much shade as possible to help inhibit the establishment and persistence of

invasive species. A Forest-wide environmental analysis (Flathead National Forest Noxious and Invasive Control Decision Notice and Finding of No Significant Impact 2001) set priorities and parameters for invasive species control. Invasive species treatments in the analysis area will be consistent with this strategy.

Threatened, Sensitive, and Rare Plants

Known Regional Forester's Sensitive Species plant populations will be avoided by equipment and other ground-disturbing activities. These sites will be flagged by the Forest Botanist or certified technicians before timber sale layout.

If previously unknown populations of sensitive plants are found during project implementation, they will be evaluated and protected as necessary to retain population viability. A contract clause will be incorporated into the timber sale contract and will specify modification to protect these plants.

Ground-disturbing activities will avoid all wetlands; including lakes, ponds, marshes, fens, and streams. Buffers will be established around wetlands: 150 feet for areas greater than one acre and 50 feet for areas less than one acre. Buffers will be determined by wetland delineation parameters as defined by the Forest Botanist, Soils Scientist, or their technicians.

Revegetation with Native Plants

Where it is necessary to re-vegetate disturbed sites (landings, roadsides, culvert removals, etc.), a native seed or desirable non-native seed mix will be used. In areas requiring greater revegetation efforts, native shrubs will be used as funding becomes available. In the event that funding is not available for planting native plants, desirable non-native plants will be used.

Roads

Road Maintenance

Road maintenance actions consisting of brushing and blading may be needed on some of the haul roads within the project area. Other minor drainage work such as the placement of drain dips, installation of additional culverts, and upsizing or replacing culverts will likely take place. Dust abatement and blading will occur as needed on the main haul routes.

Over-Snow Travel

All new system roads will not be open to public wheeled motorized access but will be available for over-the-snow vehicles December 1 through May 14. Also, Roads 9875, 11263, 11253, and 910A (the portion within Martin Creek Project Area boundary, Figure A-1) are currently open to over-snow travel from December 1 to March 31. These roads will be changed to open to over-snow travel from December 1 to May 14. See Exhibit M-3 for the Tally Lake Ranger District Over Snow Use Map.

Cultural Resources

Field investigation in accordance with the National Historic Preservation Act is ongoing. This includes consultation with the State Historic Preservation Office, the Advisory Council

on Historic Preservation, and local Native American tribes. Special timber sale contract provision "B6.24# Protecting of Cultural Resources" will be included in the timber sale contract to assure protection of cultural sites.

Appendix B

Monitoring Plan

Monitoring is gathering information and observing management activities to provide a basis for periodic evaluation of Forest Plan goals and objectives. The purpose is to determine how well objectives have been met and how closely management standards have been applied during and after project implementation. Evaluation of the monitoring results assists in the review of the condition of NFS lands as required by National Forest Management Act regulations. It may result in decisions for further action, such as modifying management practices.

There are three basic types of monitoring:

- (1) **Effectiveness Monitoring** is used to determine if management practices as designed and executed result in the desired resource condition.
- (2) **Implementation/Compliance Monitoring** is used to determine if goals, objectives, standards, and management practices are implemented as detailed in the Forest Plan, this EA, or by other State or Federal agencies. This will be performed by contract administrators, the ID Team, and resource specialists.
- (3) **Validation Monitoring** examines the quality of the data and assumptions used in the analysis process.

Several sources of funding exist for resource monitoring. No assignment of funding source to the monitoring will be made at this time because future availability of funds is unknown. Priorities for annual monitoring are established and agreed upon by the ID Team and the Responsible Official, and implementation will be based on annual budgets and program direction. All legally required monitoring will be performed.

Monitoring activities are discussed by environmental component, consistent with those used in the EA.

Soils

Effectiveness Monitoring. Regional guidance is available from the Region 1 Forest Service Manual for Soil Management FSM 2500-99-1 (USDA Forest Service 1999). Region 1 policy states “Design new activities that do not create detrimental soil conditions on more than 15 percent of an activity area. In areas where less than 15 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 15 percent.” At a minimum, the following units will be monitored:

Selected Alternative: Units 10, 11, 59, and 60

Monitoring will follow the process outlined in the Forest Soil Disturbance Monitoring Protocol (USDA Forest Service 2009). Along with the condition of the soil surface, the

amount of large woody debris and the percent effective ground cover will be determined. The objective for monitoring is to see that the productive potential of the land is maintained at a minimum of 85 percent of natural conditions.

Implementation Monitoring. For units harvested by mechanical means (feller-bunchers, skidders, etc.), soil moisture levels will be monitored by the Sale Administrator to ensure that logging, fuel treatment, and site preparation activities are conducted during periods when soils are below the recommended moisture content and less susceptible to compaction (Exhibit H-20). This monitoring must be documented in the Timber Sale Daily Inspection Report. Effects of logging on soils in units harvested by mechanical methods will be monitored by on-the-ground review.

Vegetation/Timber Management

Reforestation surveys will be conducted for each regeneration harvest unit. Surveys will occur at a minimum during the first, third, and fifth year following completion of the initiating activity for reforestation (site preparation or planting). This monitoring is necessary to assure adequate stocking levels for stand certification (Forest Plan, Appendix I).

Compliance surveys will be conducted on all units after harvest or thinning activities are accomplished. These surveys will meet the dual purpose of determining whether stand treatment, fuel management, and/or site preparation objectives are met and to gather data on the current condition of stands for planting or other future management needs.

All harvest and thinning activities will be monitored to ensure compliance with contract specifications. Minor contract changes or contract modifications will be enacted, when necessary, to meet objectives and standards on the ground. Treatment unit layout, prescriptions, and contract provisions will be reviewed by a district management team to determine compliance with Forest Plan goals, objectives, and standards prior to contract award.

Effectiveness and implementation monitoring for invasive species management will continue for at least three years following activities that impact infestations, as well as after treatment.

Wildlife

Monitoring will determine if timber sale and site preparation activities maintained appropriate levels of present and future snags and large woody debris. This should be done after the first several units are harvested.

Monitoring of species associated with old growth habitats will occur in accordance with the Forest Plan.

Monitoring to assess effectiveness of public motorized access restrictions on temporary roads and other closed roads used for project implementation will occur during project activities and during big game hunting season.

Roads

All road construction and road maintenance will be monitored to ensure compliance with specifications and to meet the intent of management practices. Specifications will be designed to meet objectives and management practices. The Forest Service will monitor the work performed by the contractor to ensure that their methods of operation and work are in compliance with the specifications. If the designed work is not meeting the objectives and management practices, a modification may have to be made by Forest Service personnel to change the work to meet the objectives and management practices.

Water Resources

Potential sediment sources (such as stream crossings and road construction/reconstruction) in the sale area will be monitored to assess the implementation and effectiveness of BMPs, particularly on new road construction. This monitoring will indicate needs for further stabilization or sediment control measures to protect water quality. Areas of disturbed soil as a result of logging and road reclamation will be monitored for revegetation.

Monitoring of stream habitat conditions will continue. Measurements are taken at the lower-most Designated Monitoring Reach (DMR) every 5 years. This work is done by the PACFISH/INFISH Biological Opinion (PIBO) monitoring group, located in Logan, Utah. Measurements at the other two DMRs will occur every 3-5 years, and will be done by district personnel as time and budget allow.

Invasive Species

As funding becomes available, known infestations will be monitored for spread and disturbed areas will be monitored for new infestations.

Threatened, Sensitive, and Rare Plants

Any known populations will be monitored for effects to individuals and habitat after project implementation.

Recreation

District recreation personnel will monitor system trails and other areas for erosion problems and illegal use. Education efforts will be implemented through signage, direct visitor contact, and law enforcement patrols.

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