

# CLEAR CREEK PROJECT

## Decision Notice

Lolo National Forest  
Plains/Thompson Falls Ranger District  
Sanders County, Montana

September 2014

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<b>Responsible Official:</b>	Tim Garcia, Forest Supervisor
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# Clear Creek Project Decision Notice

## TABLE OF CONTENTS

1.0 Objection Review.....	1
2.0 Decision.....	2
3.0 Purpose and Need for Action.....	6
4.0 Public Involvement and Collaboration.....	7
5.0 Issues.....	8
6.0 Other Alternatives Considered.....	19
7.0 Rationale for the Decision.....	21
8.0 Finding of No Significant Impact (FONSI).....	25
9.0 Findings Required by Law, Regulation, and Policy.....	32
10.0 Pre-decisional Administrative Review Process (Objection Process) and Implementation.....	38

## APPENDICES

Appendix A: Response to Comments on the Clear Creek Environmental Assessment

Appendix B: Map of the Selected Action

Appendix C: Details of the Selected Action

Appendix D: Resource Protection Measures and Monitoring

Appendix E: USFWS Biological Opinion Conclusions on Bull Trout

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# CLEAR CREEK PROJECT

## Decision Notice

### 1.0 Objection Review

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A draft Decision Notice was issued in December 2013, which was subject to the objection process pursuant to 36 CFR 218. The 45-day objection period commenced with publication of a legal notice in the *Missoulian* newspaper on December 6, 2013. The Alliance for the Wild Rockies submitted the only objection, which included the following concerns: the replacement of culverts in the Inventoried Roadless Area; identification of the minimum road system; viability of old-growth associated Management Indicator Species, fisher, black-backed woodpecker, flammulated owl, wolverine, and lynx; impacts of fire suppression; effects to soils; clarity of the purpose and need for vegetation treatments; consistency with the Prospect TMDL; and impacts to bull trout.

The Regional Forester's staff reviewed the objection, the Environmental Assessment, draft Decision Notice, and the contents in the Project File. On March 7, 2014, the Regional Forester determined the project is in compliance with all laws, regulations, policies and the Forest Plan and that most of the Objector's issues/contentions and suggested remedies did not require further discussion or instructions to the Responsible Official for one or more of the following reasons:

- 1) The proposed actions are compliant with applicable regional guidelines, the Forest Plan and/or law, regulation and policy as supported by adequate analysis and rationale made available in the EA and draft DN and information in the project file;
- 2) No actions are proposed in the habitat types alleged by the objector to be affected;
- 3) The appropriate models, methodology and/or science were applied;
- 4) Species raised by the objector are not listed as endangered or threatened under the Endangered Species Act and therefore there is no requirement to consult with U.S. Fish & Wildlife Service;
- 5) The Forest already provided an adequate and thorough response to the issue in the Response to Comments section in the Draft DN; and
- 6) The objector failed to raise the issue in comments previously submitted during a public comment period and the issue is not based on new information (36 CFR 218.8(c)).

In her determination, the Regional Forester instructed the Forest to address the following items prior to signing a final Decision Notice:

- 1) better articulate the purpose and need for vegetation treatments; and
- 2) include the wolverine analysis and determination of effect from the wildlife report in a Biological Assessment. (Note that on February 4, 2013, after publication of the original Clear Creek EA, the U.S. Fish and Wildlife Service issued a proposed rule to list the wolverine as a threatened species under the Endangered Species Act (Federal Register Vol. 78, No. 23 7874-7887). On August 13, 2014, the USFWS withdrew the proposed listing rule.)

In response to Instruction #1, the Forest further clarified the vegetation purpose and need in the 2014 Clear Creek EA, pages 11-13.

In response to Instruction #2, the Forest completed a Biological Assessment for wolverine (see Project File) and submitted it to the U.S. Fish and Wildlife Service. The USFWS concurred with the Forest's finding of No Jeopardy and determined a conference was not required (letter dated May 30, 2014).

Having complied with these instructions, I am authorized to sign this Decision Notice for the Clear Creek project pursuant to 36 CFR 218.12(b).

## **2.0 Decision**

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It is my decision to implement Alternative 2 as presented in the 2014 Clear Creek Environmental Assessment (EA). As described in the 2014 EA, there were some minor modifications to the proposed action in contrast to what was displayed in the draft Decision Notice (December 2013).

### **Authorized Activities**

The Selected Action will achieve the purpose and need of the project by implementing the activities described below and displayed on the map in Appendix B. More details are provided in Appendix C.

#### Weed Treatment

- Roadside herbicide spraying of weeds along approximately 15 miles of road (including new road construction and roads that are currently undrivable that will be reopened to access vegetation treatment units). This treatment will complement the already authorized weed spraying along approximately 40 miles of drivable road within the project area that is ongoing.
- Broadcast herbicide treatment on up to 198 acres within watershed improvement units W1 and W2 to reduce existing weed populations in the valley bottom adjacent to Clear Creek (see description of treatments for Units W1 and W2, below).

Recreation:

- Expand the Clear Creek trailhead (Trail 627T) to provide for parking and a trailer turnaround.
- Reroute portions of the Clear Creek trail with hand tools to avoid wet areas (about 100 feet in the lower end) and reduce grade (about 1000-2000 feet) in the upper basin.

Vegetation Management

- Manage vegetation using mechanical methods and/or prescribed burning on about 2096 acres to improve forest health and wildlife habitat. On approximately 1151 of those acres, timber harvest will be used as a tool to achieve vegetation objectives. Within these areas, trees cut as a by-product of forest health and wildlife habitat improvement activities will be removed and utilized for wood products. On the remaining 945 acres, non-commercial activities (e.g. prescribed burning, non-commercial thinning of small diameter trees) will be performed (see Table 1 below for summary of vegetation treatments and Appendix C for more detail).

**Table 1: Summary of Vegetation Treatment**

<b>Proposed Treatments</b>	<b>Acres</b>
Commercial Thin	904
Shelterwood Cut followed by prescribed burning	247
Non-commercial Thin	68
Prescribed Burning	679
Watershed Improvement	198
<b>TOTAL</b>	<b>2096</b>

Watershed Improvements:

- Decommission roads that are unneeded for future management. Place other roads that are needed in the long-term but not for the next several decades into long-term storage (see road management actions below).
- Replace 8 road culverts with larger structures to improve stream flow and/or fish passage. Remove 9 culverts on roads to be stored or decommissioned.
- Address road/stream interface issues in specific locations by:
  - Relocating dispersed camp sites away from Clear Creek (to at least 125 feet) where problems exist to protect stream stability.
  - Relocating/realigning the switchback at the end of Road 153 to move the road further away from Clear Creek. As part of this road redesign, sufficient room for the Clear Creek trailhead (Trail #627T) will be provided to allow for parking and a trailer turnaround.
- Treatment Areas W1 and W2:
  - Spray weeds with herbicide or other mechanical treatments within the treatment areas followed by introduction of approved biological control agents (insects).
  - After weed treatment, prepare site for vegetation establishment which may include hand or machine decompaction and/or mixing the site with adjacent forest floor.
  - Seed and plant the area with a mix of forbs, grasses, shrubs, and trees.

- Cover any seeded/planted areas with slash or mulch 2-3 inches deep across 70 percent of the area (accomplished through on-site felling of trees to increase coarse woody debris, moving in slash from other areas, or through use of a portable shredder/mulcher to spread finer material across the ground).
  - Place wood jams in the old flood channels as needed for flood water control and provide microsites for plant establishment – trees on site could be felled and used for this activity.
  - Outside of stream buffers, reduce density by thinning small trees to improve the health and vigor of the trees desired for retention.
  - In addition, within W2, treatment will also include creating 5 to 10 small opening that will be planted with trees to improve long-term site diversity. New openings will be created by patch cutting in non-commercial size-classes and suppressed Douglas-fir and lodgepole pine. New openings will be about ½ acre in size to create adequate growing environment.
- Instream rehabilitation work within Clear Creek from the Clear Creek trailhead downstream to the private property boundary (approximately 5 miles). Work will be a combination of bank and channel treatments, including placement of woody debris and boulders. Bank treatments (engineered log jams and soil lifts) will be installed on outside bends and occasionally in straight reaches. Although this segment of Clear Creek is intermittent, the purpose of the treatment is to stabilize the streambanks to keep the water within the channel during spring flows.

#### Road Management

- Construct approximately 3 miles of temporary and 0.25 miles of long-term specified road consisting of multiple segments to access vegetation management areas.
  - Temporary roads will be constructed to a minimal standard to provide access for timber harvesting equipment and log trucks. These roads will be decommissioned following use for this project. Decommissioning of the road will include replacing overburden (excavated soils) back onto the road prism to return the ground to its natural contour, placing woody debris on the disturbed area, and seeding the disturbed soil.
  - The segment of long-term specified road (0.25 miles) will be constructed to connect two existing road prisms together to allow for the decommissioning of approximately one mile of existing road because it will no longer be needed for access to this piece of ground. This new road segment as well as two existing segments of road it will connect will be placed into long-term storage following use for this project.
- Maintain approximately 33 miles of road. The intent of road maintenance is to bring the road into conformance with its assigned maintenance level and function, not to improve the road beyond its assigned standard. Because these roads are intended for long-term access, and in most cases will remain open to public travel, work will be performed to minimize environmental impacts and to provide a safe and stable road. Maintenance work will include surface blading, minor earth work (e.g. cut and fill reshaping), road surface reshaping, ditch cleaning and reshaping, roadside clearing and/or brushing, seeding disturbed areas, drain dip and cross drain cleaning and construction, culvert cleaning, armoring, and/or replacement, slash filter windrow and sediment trap construction near live water crossings.

- Decommission approximately 31 miles of road that are not needed for future use. Field surveys were conducted on these roads to determine their existing condition and identify appropriate closure treatment methods. Approximately 84 percent (26 miles) of these roads are grown in with brush and trees and pose no aquatic or wildlife concerns. These roads will be administratively decommissioned, meaning that no physical activities will be completed on the ground to close them because they are essentially already naturally decommissioned. On the remaining 5 miles (16 percent) of these roads, various physical treatments will be performed to close the road. See Appendix C for more details.
- Store approximately 43 miles of road that may be needed in the future for long-term access, but not in the short-term. Storage treatments will maintain these roads in a stabilized condition for future use. Approximately 47 percent (20 miles) of these roads are mostly grown in with brush and trees and pose no aquatic or wildlife concerns. These roads will be administratively stored, meaning that no physical activities will be completed on the ground to close them. On the remaining 23 miles (53 percent) of these roads, various physical treatments will be performed to store the road. Treatment activities will include removal of stream crossing structures and restoring the stream crossings to natural contours, water bar installation at frequent intervals, grass-seeding, and entrance closure. Ripping (de-compaction) will occur where there is little to no existing vegetation on the road surface.
- Move the gate on Road 302, which is open seasonally from December 1 to October 15, less than 500 feet up the road to a new location just past the intersection with Road 16210 to allow for a vehicle turnaround. This gate relocation will require the installation of another gate on Road 16210 to maintain the existing seasonal closure of this road.
- Add approximately 19 miles of existing undetermined roads to the National Forest System Road atlas (See Appendix C, Table C-2). Through the Travel Analysis process, these roads were determined to be needed for future management purposes or to allow public access for dispersed recreation. All of these roads except for 0.8 miles for dispersed recreation will be placed into long-term storage. Approximately 9 miles of these roads will be used to access proposed vegetation treatment areas for this project and physically stored following use. The other 9.2 miles will not be used for this project and will be administratively stored: no physical treatment will be needed due to their existing vegetated condition.
- Install a gate on Road #18758 (Quail Gulch) at the intersection with Road #153 to close the road to the gravel pit. This road will be closed year round to public motorized travel. Following use of the gravel pit for this project, the road will be grass-seeded.
- Establish a temporary gravel stockpile site for road maintenance purposes just off the Clear Creek road, about a mile east of the pit (see map in Appendix B). Site will be rehabilitated following use.

**Table 2: Summary of Road Treatments**

	Miles
<b>New Construction</b>	
Long-term Specified; store following use for this project	0.25
Temporary (multiple segments)	3
<b>Road Treatments</b>	
Road Maintenance	33
Decommission	31
Long-term Storage	43

There will be no net change in the miles of road that can be legally and physically driven by the public (see the Transportation section in Chapter 3 of the 2014 EA for more information).

**Table 3: Summary of Proposed Road Closure Treatments**

Road Closure Treatment Type	Miles
<b>Decommission</b>	
Physical Treatment	5
Administrative Closure – No treatment <sup>1</sup>	26
<b>TOTAL</b>	31
<b>Long-term Storage</b>	
Physical treatment	23
Administrative Closure – No treatment <sup>1</sup>	20
<b>TOTAL</b>	43

<sup>1</sup>Roads are naturally revegetated and stabilized. No physical treatment is needed and roads will be administratively closed.

My decision includes the resource protection measures listed in Appendix D.

### **3.0 Purpose and Need for Action**

The need for the Clear Creek project was derived from the difference between particular aspects of the desired landscape condition and the current condition. The Lolo Forest Plan provides the primary management direction to the goals/desired future condition of these resources. The following purposes of the project address these differences:

- Restore forest stand resiliency and resistance to insects and disease by reducing competition-induced mortality. Perpetuate/sustain desired species by maintaining diversity and breaking up the continuous tree canopy to increase the chance of survival of long-lived trees in the event of a widespread wildfire.
- Improve and maintain big game winter range
- Improve water quality, stream stability, and fish passage
- Enhance recreation facilities.

The purpose and need for the Clear Creek project is discussed in detail in the 2014 EA on pages 11-15.

## 4.0 Public Involvement and Collaboration ---

### ***PreScoping***

On April 1, 2009, the Forest Service issued a letter to notify the public that the agency was in the initial stages of developing a project for the Clear Creek area. This letter, which also served as an invitation to a public meeting, was sent to approximately 120 nearby landowners and individuals and groups who have previously requested to be notified of projects on the Lolo National Forest. Seventeen written responses were received. Most of these responses were requests to be kept informed of project developments and the rest provided management recommendations for the area.

On April 22, 2009, The Forest Service held a public meeting to share information about the project area and to encourage interested people to participate in a collaborative effort to help in the development of proposed actions for the Clear Creek project area. Approximately 16 people attended the meeting. A small, diverse group of people, consisting of local residents, County commissioners, and representatives of environmental organizations and the timber industry, stepped forward to participate in a collaborative process. They worked with Forest Service personnel over several months to identify various management opportunities and needs for the area.

### ***Scoping***

On April 6, 2010, scoping letters were mailed to 101 landowners, organizations, other agencies, and individuals who have previously requested notification about the types of activities included in this project. The scoping letter and associated maps were also posted on the Lolo National Forest website.

A project announcement and public meeting notice was published in the *Clark Fork Valley Press* and *Sanders County Ledger*, on April 21 and 22, 2010, respectively. A public meeting was held during the scoping period on April 26, 2010 to share information about the project and encourage public comment. Approximately 11 people attended the meeting.

At the completion of the scoping period, 9 letters had been received. Most of the letters were generally supportive of the overall proposal; however some had concerns regarding specific aspects of the project.

### ***Environmental Assessment and Draft Decision Notice Comment***

On September 4, 2012, copies of the Clear Creek Project Environmental Assessment and Draft Finding of No Significant Impact were mailed to individuals and organizations that had previously commented on or expressed interest in the project. The EA was also posted on the Lolo National Forest website. The 60-day comment period on the EA began with the publication of legal notice in the *Missoulian* newspaper on September 7, 2012. On September 12 and 13, legal notices announcing the availability of the EA and an upcoming public meeting were also published in the *Clark Fork Valley Press* and *Sanders County Ledger*, respectively. On September 27, 2012, the Forest Service held a public meeting to provide additional information about the project and answer questions. Three people attended the meeting. At the close of the comment period, five comment letters had been received. Three letters expressed support for the project and two letters raised various questions and concerns.

### ***Clear Creek Road/Stream Interface Rehabilitation Decision Notice***

On September 13, 2013, the road/stream interface watershed improvement work outlined in the Clear Creek EA was authorized under the Clear Creek Road/Stream Interface Rehabilitation Decision Notice. Copies of this document were mailed to individuals and organizations that had previously commented on or expressed interest in the project. A legal notice was published in the *Missoulian* newspaper on September 19, 2013. This Decision Notice authorized the realignment of four segments of Road 153 where it is immediately adjacent to Clear Creek.

Work authorized under this decision was initiated late September 2013 and completed July 2014. Activities included moving and elevating approximately 1200 feet of the road further away from the creek, constructing a vegetated floodplain that separates the road from the creek, and planting riparian vegetation. Gravel surfacing was applied to these road segments.

### ***Objection***

On December 2, 2013, a draft Decision Notice for the Clear Creek project was published. The draft DN included the Forest Service's response to public comments on the Clear Creek EA. The 45-day Objection period on the draft DN commenced with the publication of the legal notice in the *Missoulian* newspaper on December 6, 2013. The Alliance for the Wild Rockies filed the only objection which reiterated several issues they previously raised in their comments on the EA. These issues are addressed in the Issue Resolution section below. The Forest Service Reviewing Officer accepted the objection on January 24, 2014 and provided a written response to the objection on March 7, 2014

## **5.0 Issues**

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Public and internal comments raised during the scoping period were reviewed to identify concerns and issues related to the proposed action. The Forest Service found no significant issues or unresolved conflicts concerning alternative uses of available resources. No additional issues were identified that would require another alternative to address them. These comments are briefly discussed below. Issues raised during the Objection Period on the draft Decision Notice are also addressed below.

### **Issues Raised in Scoping**

#### ***Road Decommissioning***

In response to scoping, various comments offered support for and opposition to proposed road decommissioning. Comments that were opposed cited concerns that these actions would reduce public and/or administrative access, increase sediment delivery to streams, and increase the potential for weed establishment and spread. Concerns were also raised that the agency would select and implement one decommissioning method (full recontouring) despite varying site conditions and needs resulting in a higher cost of implementation and greater resource damage.

The effects of road decommissioning and other proposed activities on access, weeds, and water quality were analyzed and are addressed in Chapter 3 of this document. To address public concerns, Forest Service personnel conducted field surveys on roads proposed for

decommissioning to determine existing road conditions, identify resource concerns, and prescribe the appropriate treatments. Depending on site-specific conditions, the appropriate road closure treatments were proposed. For example, methods for decommissioning in the action alternatives vary from no physical treatment on roads that are heavily vegetated and contain no water or soil concerns (identified as “administrative closure”), to physical treatments that range from partial treatments to remove culverts and/or address site-specific concerns, to full recontouring of the prism (see Table 3 for a summary of miles of road proposed for administrative and physical closures).

### ***Weeds***

During project development, the Forest Service identified concerns about the existing weed conditions in the area and the potential for project activities, such as harvest and prescribed burning, to exacerbate these conditions. This issue was addressed through project modification, design, resource protection measures (see Appendix D), and monitoring (see Appendix D). For example, eight resource protection measures, including one that requires washing of equipment, were included in the action alternatives. Field reviews were conducted for weeds and sensitive plants. Approximately 519 acres of prescribed burning (Units 86, 87, 92, 98, 99) were dropped from the modified proposed action due to concerns about exacerbating weeds and potential effects to identified sensitive plants.

### **Issues Raised in Objection**

#### ***Replacing culverts in the Clear Creek Inventoried Roadless Area is fiscally irresponsible and arbitrary.***

In objection, the Objector advocated decommissioning all roads within the Inventoried Roadless Area (IRA) instead of replacing the culverts. The Objector further commented that since the 2001 Roadless Area Conservation Rule limits management within IRAs, there is no reasonably foreseeable need for the roads. The Objector raised these and similar comments during scoping and on the original Clear Creek Environmental Assessment.

The Forest Service addressed the Objector’s recommendation to decommission all roads within the IRA by developing an alternative which was considered but eventually eliminated from detailed study because the 9 miles of existing roads within the Clear Creek Inventoried Roadless Area (IRA) are located within Forest Plan management areas that allow development (e.g. vegetation management and road access) (see 2014 EA Chapter 2, section 2.4 for more details). The Forest Service conducted a Travel Analysis for the project area to identify which roads were needed for future management as outlined by the Lolo Forest Plan and which roads were not. Since the IRA is designated as suitable for timber harvest, most existing roads were determined to be needed for future management. As part of the project, approximately 3.3 miles (37 percent) of existing road within the IRA are proposed for storage and 0.75 miles (8 percent) are proposed for decommissioning. Within Section 31, the cherry-stemmed exclusion within the IRA, 3.2 miles of road are proposed for either decommissioning (26 percent) or storage (74 percent). The 2001 Roadless Area Conservation Rule does not require the removal of existing roads within IRAs and allows land management actions under certain circumstances (36 CFR Subpart B 294.12 and 13).

The field inventories of roads within the IRA determined that they are in generally good condition and appropriately located on the terrain to minimize potential environmental effects. The roads are closed yearlong to wheeled public motorized travel. The replacement of three undersized culverts was identified as a deferred maintenance need on Road 7611 to ensure long-term protection of water quality and infrastructure. Although the culverts are undersized, they were identified as a low risk for potential failure.

Replacing culverts is a road maintenance item. The 2001 Roadless Rule allows maintenance of classified roads in Inventoried Roadless Areas (36 CFR Subpart B 294.12(c)). Road maintenance is defined in the 2001 Roadless Rule as the ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective (36 CFR Subpart B 294.11). Replacement of undersized culverts with larger ones is also consistent with the Lolo Forest Plan (pages II-12, III-58). The replacement of the culverts within the IRA is not irreversible or irretrievable and does not preclude future management options such as decommissioning these roads.

The Forest Service believes the Forest Plan revision process is the most appropriate scale to re-evaluate IRAs, how they should be managed in the future, and if existing roads should remain or be removed from IRAs. The Forest Plan revision process will allow for consideration of all IRAs on the Lolo National Forest and for more effective and comprehensive public involvement regarding this controversial issue. Revision of the Lolo Forest Plan is expected to begin in 2016.

***The Forest Service failed to properly analyze and disclose the minimum road system.***

In objection, the Objector stated, “In short, the EA does not disclose if or how the agency will be able to afford to maintain the post-project road system, and the ecological impacts if it fails to do so. Alternative 2-modified would be inconsistent with 36 CFR 212.” In the Objector’s comment letter on the initial proposal during scoping, he requested an alternative be designed to complete all deferred or outstanding maintenance needs/BMP upgrades within the project area.

In response to this request, the Forest Service considered this alternative, but dropped it from detailed study because the remaining maintenance items not addressed in Alternative 2 are of low priority (primarily roadside brushing) and do not contribute to the purpose and need of the project (see 2014 EA Chapter 2, section 2.4 for more details).

The Clear Creek project area contains approximately 134 miles of roads under Forest Service jurisdiction. About 84 miles of these are system roads and 50 miles are undetermined roads. The Clear Creek project would treat approximately 107 miles or 80 percent of the road miles under Forest Service jurisdiction within the project area with decommissioning, storage, or maintenance. Undersized culverts would be replaced on the remaining 27 miles or 20 percent, otherwise they would remain untreated to minimize soil disturbance. These roads receive periodic maintenance on a priority basis. Of the 27 miles of roads left untreated by the project, only about 5 miles are open and drivable to public wheeled motorized travel for part of the year. The rest of the roads untreated by the project are closed yearlong to public wheeled motorized travel, which generally reduces the need for frequent maintenance.

Forest Service policy prescribes the travel analysis process at FSH 7709.55 for many purposes. Travel management decisions are to be “*informed by travel analysis, as applicable*” (FSM 7710.3). Travel management decisions are defined at FSM 7715. They “*include adding a route to or removing a route from the forest transportation system, constructing a NFS road or NFS trail, acquiring an NFS route through a land purchase or exchange, decommissioning a route, approving an area for motor vehicle use, or changing allowed motor vehicle classes or time of year for motor vehicle use.*” In these instances “*the responsible official has the discretion to determine whether travel analysis at a scale smaller than a ranger district or an administrative unit is needed and the amount of detail that is appropriate and practicable for travel analysis*” (FSM 7712.1 (3)).

Following policy, the Forest Service completed a project-specific travel analysis for the Clear Creek project area that examined all roads within the project area and documented the need for a short segment of new specified road construction, and identified some roads to be stored, some roads to be decommissioned, and some existing undetermined roads to be added to the specified road system. The recommendations identified in the Travel Analysis, with some minor modifications, were carried forward into the Clear Creek project EA and draft DN.

The Lolo National Forest is beginning an analysis of its Forest-wide minimum road system. This assessment is expected to be completed fall, 2015. The regulations at 36 CFR 212.5(b) (Subpart A), disclose requirements that the Forest Service incorporate a “science-based roads analysis” when identifying the minimum road system for each national forest. The travel analysis completed for the Clear Creek project was not designed to identify the minimum road system for the Lolo National Forest, although the work completed will be helpful to that broader effort.

***The Clear Creek project does not assure viability for old growth associated Management Indicator Species (northern goshawk and pileated woodpecker)***

In objection, the Objector stated, “Nothing about the Forest Service’s response to our comments results in any more assurance of viability for old-growth associated wildlife species. Apparently there is no old growth in the project area, meaning that habitat for the old-growth Management Indicator Species is already not well-distributed as the National Forest Management Act requires. Regardless, the project would admittedly result in further habitat reduction for old-growth associated wildlife species.”

As disclosed in the Vegetation section of this Environmental Assessment, there is existing old growth (as defined in Green et al. 1992, errata corrected 2005) within the Clear Creek project area, but no vegetation treatments are proposed within it. Habitat estimates for maintaining viable populations of pileated woodpecker and northern goshawk have been completed at the Regional and Forest scale (Samson 2006b). Comparison of habitat required for species-specific minimum viable populations to that available indicates well-distributed habitat far in excess of that need, given the natural distribution of species and their habitats. The amount of habitat within the Clear Creek project for the northern goshawk and pileated woodpecker is displayed in Chapter 3, Wildlife section.

### Pileated woodpecker

Survey data collected from 1994 to 2006 across the Northern Region indicate that populations have remained fairly stable (Avian Science Center). Bird surveys have shown that pileated woodpeckers are common in most habitats on the Lolo National Forest. Pileated woodpeckers were observed in nearly all transects conducted in the area around Thompson Falls, close to the project area. In addition, foraging sign was identified within the Clear Creek project area. The Clear Creek project would not affect species viability because:

- Vegetation treatments would retain larger overstory trees.
- Snags would be retained in accordance with Lolo National Forest guidelines.
- Average tree diameter of stands proposed for harvest would generally increase after treatment because smaller trees would be cut and/or removed.
- No activities are proposed within stands that meet the Regional definition for old growth (Green et al. 1992, errata corrected 2005). (see Chapter 3 Wildlife section for more details).

### Northern goshawk

Based on recent broad-scale habitat inventory and monitoring assessments conducted in the Northern Region, breeding goshawks and associated habitats appear widely distributed and relatively abundant on National Forest System lands (Samson 2006a, 2006b; Canfield 2006, Kowalski 2006). The Clear Creek project would not affect species viability for northern goshawk because:

- Nesting habitat would remain abundant and well-distributed.
- Foraging habitat would remain within the ranges recommended in the scientific literature (Reynolds et al. 1992).
- No known nests would be disturbed or affected by proposed activities and any newly discovered nests would be protected.
- Habitat for goshawks is abundant and well-distributed across the Forest and Region - more than sufficient to sustain a viable population of goshawks (Samson 2006a, 2006b). (See Chapter 3, Wildlife section for more details).

### ***The Clear Creek project does not assure viability for fishers.***

In objection, the Objector also claimed that the project does not assure viability for fishers.

Habitat estimates for maintaining viable fisher populations have been completed at the Regional and Forest scale for fisher (Samson 2006b). Comparison of habitat required for a species specific minimum viable population to that available indicates well-distributed habitat far in excess to that needed, given the natural distribution of the species and habitat (refer to the 2014 EA, Chapter 3 Wildlife section and Wildlife Report for more information).

The Clear Creek project would not contribute to a loss of species viability because:

- The potential for effects to even one individual fisher is relatively low due to their naturally rare and wide distribution and the naturally limited amount and distribution of suitable habitat.

- The project proposes to commercially treat a modest 5.8 percent of suitable fisher habitat and 2.2 percent of potential<sup>1</sup> habitat distributed in small, disjunct patches across multiple treatment units. Impacts would be temporary in nature and small in scale.
- No activities would fragment wet forest types.
- Riparian forest areas would be maintained through the application of Riparian Habitat Conservation Areas (see Resource Protection Measures in Appendix D).
- There would be no change to trapping pressure or effects to population linkages because drivable, open road density would remain unchanged.
- Coarse woody debris and snags would be retained consistent with Forest Plan Standards (see Resource Protection Measures in Appendix D). No existing old growth would be affected (see Vegetation section).
- Fisher habitat is currently abundant and well-distributed on the Forest and Region to maintain viable fisher populations (Samson 2006b).

***The Forest Service did not complete an adequate analysis of effects to black-backed woodpecker.***

In objection, the Objector claimed the Forest Service did not complete an adequate analysis of effects to black-backed woodpecker.

Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead and dying trees, which primarily wood borer beetles have colonized (Dixon and Saab 2000; Powell 2000). Large expanses of fire-killed trees are considered the most suitable habitat for this species in Montana (Hutto 1995). The Clear Creek project does not propose harvest activities within this habitat (burned or unburned). In addition, the Clear Creek project would not preclude the development of future habitat. Although proposed treatments would reduce the risk of high severity fire and insect and disease outbreaks within treated areas, they would not prevent natural disturbances (e.g. fire, insects, and disease) within these areas and subsequent tree mortality in the future. As discussed earlier, the project's vegetative treatments are proposed in an area historically characterized by low- and mixed-severity fires. The entire south side of Clear Creek, which contains forests that evolved in stand-replacement fire regimes, would remain unaffected by the project. Thus, the project was determined to have no impact on this species (refer to the 2014 EA, Chapter 3 Wildlife section and Wildlife Report for more information).

Vegetation treatments are proposed on approximately 12 percent of the 18,223-acre Clear Creek project area, primarily in the dry ponderosa pine/Douglas-fir forest types. Regional assessments (Samson 2006a, 2006b) indicate viability is not a concern for the black-backed woodpecker because:

- Black-backed woodpecker habitat in the Northern Region is abundant and well-distributed across the Region and Lolo National Forest. A comparison of habitat required for a minimum viable population to that available indicates well-distributed habitat far exceeds that needed, given the natural distribution of the species and their habitats as mapped and according to the scientific literature (Samson 2006b).

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<sup>1</sup> Potential fisher habitat does not currently meet summer and winter habitat requirements but has the potential to grow into suitable fisher habitat in the future.

- Evidence suggests the black-backed woodpecker is increasing in numbers in the United States (as cited in Dixon and Saab 2000). No demographic information exists to suggest a decline in woodpecker numbers.
- Habitat for the black-backed woodpecker has recently increased and amounts are expected to increase as fires and bark beetle outbreaks continue to increase in size (Gallant et al. 2004, Hessberg and Agee 2003, Hessberg et al. 2004).
- The level of salvage timber harvest of the forest landscape in the Northern Region is insignificant (Samson 2006a).

***The Clear Creek project does not assure the viability for flammulated owl.***

In objection, the Objector claimed the project does not assure viability for flammulated owls.

Habitat estimates for maintaining viable populations have been completed at the Regional and Forest scale for flammulated owls (Samson 2006a, 2006b). Comparison of habitat required for a species-specific minimum viable population to that available indicates well-distributed habitat far in excess of that needed, given the natural distribution of the species and its habitat.

The Clear Creek project would not contribute to a loss of species viability or trend toward Federal listing for flammulated owl because:

- Flammulated owl habitat is abundant and well-distributed across the Region and Lolo National Forest.
- Suitable habitat would be maintained on all but 2.3 percent of the existing habitat on National Forest System lands within the project area and habitat is abundant across the Forest.
- The project would improve the quality of foraging habitat on about 14 percent of the existing flammulated owl habitat on National Forest System lands across the project area. (Refer to Chapter 3 Wildlife section and the Wildlife Report for more information)

***The Clear Creek project does not assure the viability for wolverine.***

In objection, the Objector claimed the project would not assure the viability of wolverine.

After publication of the original Clear Creek EA, the U.S. Fish and Wildlife Service listed the wolverine as a proposed threatened species (Federal Register 78:7864-7890, February 4, 2013). They concluded that while wolverines appear stable to expanding, the primary threats to the contiguous U.S. population is the risk of eventual habitat and range loss due to climate warming, with secondary threats from trapping/wolverine harvest, with potential threats from disturbance associated with human developments [e.g. houses and ski areas] and transportation corridors [e.g. interstate highways and high volume secondary highways], and loss of genetic stochasticity due to isolation between snowy habitats caused by climate change (Federal Register 78:7864-7890, 2013). The USFWS specifically mentions that forestry-related management practices are not likely a factor contributing to the decline (FR at 7879). Timber management, winter elk security, thermal cover, or over-the-snow uses managed by the Forest Service were not identified as threats to the U.S. population (FR at 7878-79).

On August 13, 2014, after considering the best available science, the USFWS declared that listing the wolverine as a threatened species was not warranted because they determined the

effects of climate change are not likely to place the wolverine in danger of extinction now or in the foreseeable future (79 FR 47522). Although the USFWS acknowledged that climate change effects are expected to result in loss of some wolverine habitat, they noted that there is no available data to inform whether or how these projected impacts may affect the viability of wolverine populations. Thus, the USFWS withdrew its proposed listing rule.

The Clear Creek project would not lead to a loss of species viability or contribute to a trend toward Federal listing because:

- 1) The project would not change the presence, absence, or abundance of snow remaining late into the spring.
- 2) No activities would occur within denning habitat.
- 3) The project would not increase human use or access to habitat areas of persistent snow.
- 4) Trapping access has been limited within the project area through travel management restrictions on roads. The Clear Creek project would not increase public motorized access. The wolverine trapping season has been suspended in Montana since November 2012 and remains closed.
- 5) The project activities are proposed primarily in areas (mid-elevation dry forest types) not specifically selected by wolverines for use. In addition, wolverines naturally occur in low densities. Thus, the potential for disturbing/displacing even one individual wolverine is low.
- 6) Proposed vegetation treatments would not affect wolverine movement or dispersal across the landscape.

Prior to the withdrawal of the proposed rule, the U.S. Fish and Wildlife Service concurred with the Forest Service's finding that the project would not jeopardize the Lower 48 population of the wolverine and determined a conference was not required (letter dated May 30, 2014). Refer to the 2014 EA, Chapter 3 Wildlife section and the Wildlife Report and Biological Assessment for more information.

***Proposed management of winter hare habitat will not ensure viability of Canada lynx.***

In objection, the Objector also claimed the Clear Creek project would affect winter hare habitat and not ensure viability of Canada lynx.

Squires et al. (2010) identified that during the winter, lynx preferentially forage in mature, multilayer forests with spruce and subalpine fir in the overstory and midstory. Forests used during the winter are typically composed of larger diameter trees with higher horizontal cover, more abundant hares, and deeper snows compared to random availability; multilayer, spruce-fir forests provide high horizontal cover with tree branching that touch the snow surface. The Clear Creek project does not propose any treatments within multilayer, spruce-fir forests. Proposed treatments are primarily in ponderosa pine and drier Douglas-fir forest types which are not suitable lynx habitat because they are too warm and dry to support the dense horizontal cover required by lynx (Squires et al. 2010).

The Forest Service determined that the project would have no effect on Canada lynx because:

- Proposed treatment units are not within, nor do they alter any lynx habitat.
- Surveys for lynx within the project area did not detect their presence.

- The project is consistent with all standards and guidelines for vegetation management projects as outlined in the Northern Rockies Lynx Management Direction (see the 2014 EA, Appendix F).
- The Clear Creek project area is not located within designated lynx critical habitat (74 FR 8616, February 25, 2009).
- A total of approximately 121 acres of treatment (18 acres of timber harvest and 103 acres of prescribed burning only) are proposed within a lynx analysis unit (LAU) (an approximate area used by an individual lynx and is the unit used to analyze effects to lynx (USDA-FS 2007)); however none of the treatments are within lynx habitat. These 121 acres comprise a very modest 0.4 percent of the 27,789-acre Upper Prospect LAU.
- The project would maintain all of the elements necessary for lynx to move across the landscape.

The Forest Service discussed the Clear Creek project and the findings for lynx with the U.S. Fish and Wildlife Service. The USFWS expressed no concerns regarding the project and determined that formal or informal consultation was not necessary (memo dated June 4, 2014).

***Statements made in the original Clear Creek EA regarding fire suppression and wildland fire are contradictory.***

The Objector commented, “*The EA states at p. 22, ‘...full suppression would be expected on most fires.’ Yet on p. 27 under Effects Common to All Alternatives it also states, ‘Within the Clear Creek project area, wildland fire will continue to serve as a natural disturbance factor.’ The Forest Service needs to reconcile these two conflicting statements.*”

The statements in the original EA that the Objector believed were contradictory are not. Despite fire suppression efforts, wildfires still occur as evidenced by the wildland fires that burn on the Lolo National Forest every year. Last year (2013), wildfires burned approximately 20,000 acres within and adjacent to the Lolo National Forest (<http://nciweb.nwcg.gov>). One of the purposes of the vegetation treatments in the Clear Creek project is to restore stand structures and compositions more likely to support low- and mixed-severity wildfire which was historically characteristic of the dry ponderosa pine/Douglas-fir forest types proposed for treatment. Thus when a wildfire does burn at some time in the future, the potential severity would likely be lower within treated areas compared to what would happen today with the current stand conditions. The 2014 EA clarifies this point (pages 51-52, Fuels section 3.3).

***Cumulative effects associated with fire suppression were not considered.***

In objection, the Objector also claimed the cumulative effects analysis did not consider the effects of fire suppression.

The purpose and need for the project acknowledges the effects of fire suppression on vegetation condition and wildlife habitat. Past and ongoing fire suppression has modified vegetation conditions including an increase in fuel load, stand density, and risk to high-severity fire. Past and ongoing fire suppression has also modified big game winter range; reducing forage for elk and deer. The project’s proposed treatments would emulate the effects of low- and mixed-severity fire to increase forest resilience and maintain forage for big game. Following treatment,

low- and mixed-severity wildfires would be more likely to occur; in line with the historical characteristics of the treated areas.

The effects of fire suppression are acknowledged in various resource reports in the project file: Wildlife Report (flammulated owl, Townsend's big-eared bat, black-backed woodpecker); Fire and Fuels Report; Vegetation Report; Soil Report; and Hydrology Report.

***EA fails to disclose effects to soils***

In objection, the Objector claimed the EA violates the National Environmental Policy Act because it fails to disclose effects to soils; methodology used to determine findings; soil mitigation and recovery assumptions and methodology; and impacts of noxious weed infestations on soil productivity.

The EA summarizes the soil analysis findings, which are fully disclosed in the Soil Report and associated soil assessment documents in the Project File. A display of the estimated soil disturbance caused by the project is contained within Appendix C of the EA.

36 CFR 220.7(b)(3) states that "the EA shall briefly provide sufficient evidence and analysis, including the environmental impacts of the proposed action and alternative(s) to determine whether to prepare either an EIS or FONSI". The EA may incorporate by reference data, inventories, other information and analyses (36 CFR 220.7(b)(3)(v)). The original Clear Creek EA (page 23) states, "Further analysis and conclusion about the potential effects are available in reports for each resource and other documentation cited in those reports. These documents are contained within the project file, which is available at the Plains/Thompson Falls Ranger District office."

***The purpose and need for vegetation treatments is not adequately supported. Because the need for vegetation treatments is not supported, the proposal to construct temporary roads to access the treatment areas is not justified.***

The Objector purported the purpose and need for the project's vegetation treatments is not scientifically supported. In response to this objection, the Regional Forester instructed the Forest to provide additional rationale for the vegetation treatments.

The Forest Service has further clarified the vegetative purpose and need in this updated EA (see pages 11-13).

Approximately 3 miles of temporary road consisting of multiple segments would be constructed to access proposed harvest units. These temporary roads would be located within developed areas where topographic breaks in the slope limit the reach of yarding equipment from the existing roads. Following use, these roads would be decommissioned and the sites rehabilitated. Temporary roads would be located in mid to upper slope locations and not cross live water. Project design and resource protection measures outlined in Appendix D would minimize the potential for environmental effects.

***Sediment effects and consistency with Clean Water Act***

The Objector claimed the EA does not quantify sediment effects from project activities and thus does not demonstrate consistency with the Clean Water Act or address whether the project adequately responds to the Prospect Total Maximum Daily Load (TMDL) Plan (2009).

For the Clear Creek project, the Forest Service used the WEPP model to assess the potential sediment delivery from roads resulting from project activities. Modeled amounts of sediment are quantified in the Fisheries and Hydrology reports in the Project File and displayed in Figure 1 on page 37 of the original EA.

Model results should only be considered in trend and general magnitude comparisons and should not be considered absolute values. Use of the WEPP model is widely accepted and provides a reasonable interpretation and prediction tool in the dynamic forest environs. Similarly, the WEPP and XDRAIN models were used in the development of the Prospect TMDL to display road-related surface sediment production.

The Hydrology Report supports the findings presented in the original and this updated EA, which state that modeling indicates the Clear Creek project would achieve the TMDL loading allocation reduction from forest roads and culverts and contribute to the allocation reduction for human-influenced bank erosion.

***Cumulative effects to bull trout.***

In objection, the Objector claimed the Clear Creek EA did not adequately assess cumulative effects on bull trout.

The original EA (pages 43-45) addressed cumulative effects on bull trout within Clear Creek and the greater Prospect Creek watershed. The 2014 EA also discloses cumulative effects to bull trout (pages 72-74).

***Lolo National Forest is required to consult with the USFWS regarding effects to bull trout critical habitat.***

The Objector asserted that before the Clear Creek project can proceed, the Lolo National Forest is required to consult with the USFWS regarding effects to bull trout critical habitat.

There is no designated bull trout critical habitat within the Clear Creek watershed. However, Prospect Creek, into which Clear Creek flows, is designated critical habitat from its confluence with the Clark Fork River to its headwaters.

Critical habitat which may be affected by the project includes approximately two miles of Prospect Creek between its confluence with Clear Creek and the Clark Fork River. This section of Prospect Creek functions primarily as a migratory corridor for bull trout and does not contain spawning habitat due to the natural stream gradient and morphology. Sediment generated from road-related activities (maintenance, decommissioning, storage, and use) as part of the Clear Creek project was identified as having the potential to affect critical habitat downstream of the project area.

In accordance with Section 7 of the Endangered Species Act, the Forest Service consulted with the U.S. Fish and Wildlife Service regarding potential effects of the Clear Creek project on bull trout and designated critical habitat. The USFWS concluded that critical habitat will not be destroyed or adversely modified because project-generated sediment would be short-term and, over the long-term, project activities would result in a decrease in sediment delivery, improving critical habitat.

## **6.0 Other Alternatives Considered** \_\_\_\_\_

In addition to the modified proposed action (Alternative 2), the Forest Service evaluated a No Action Alternative in the Clear Creek Environmental Assessment. Several other alternatives were considered, but dismissed from detailed study for the reasons summarized below.

### **Alternatives Considered but Eliminated From Detailed Study**

#### *Original Proposed Action*

The original proposed action was dropped from detailed study because it was modified in response to public comments and preliminary analysis findings by Forest resource specialists. See description of modifications in Chapter 1 of the 2014 EA.

#### *Decommission all roads within the Inventoried Roadless Area*

One commenter asked the Agency to consider an alternative that decommissioned all roads within the Clear Creek Inventoried Roadless Area and within Section 31, the cherry-stemmed exclusion area within the IRA presumably to restore the roadless character.

The Forest Service considered this alternative but dropped it from detailed study because the Lolo Forest Plan designates this area as suitable for timber management. The Lolo Forest Plan (1986) evaluated the Clear Creek IRA for possible wilderness designation. This approximate 5500-acre area ranked low for wilderness characteristics and most of the area was subsequently designated as suitable for development. Prior to and after publication of the Lolo Forest Plan, some roads were constructed within the IRA and timber harvest was conducted in some areas. Currently there are approximately 9 miles of road within the Clear Creek IRA. The Forest Plan revision process is the most appropriate scale to re-evaluate the management of Inventoried Roadless Areas, including the Clear Creek IRA. Until the Forest Plan is revised, none of the activities in the Selected Action preclude future management options within the Clear Creek IRA.

Following policy, the Forest Service completed a project-specific travel analysis for the Clear Creek project area that identified which roads were needed for future management as outlined in the Forest Plan and which ones were not. Since the IRA is designated as suitable for timber harvest, most existing roads were determined needed for future management. In addition, the 2001 Roadless Area Conservation Rule allows land management actions under certain circumstances (36 CFR 294.12 and 13).

The Selected Action partially addresses the public comment in that approximately 3.3 miles (37 percent) of road within the IRA are proposed for storage and 0.75 miles (8 percent) are proposed

for decommissioning. Within Section 31, the cherry-stemmed exclusion within the IRA, the 3.2 miles of road are proposed for either decommissioning (26 percent) or storage (74 percent).

Reconsider fire policy to allow unplanned wildland fires to burn within the project area

One organization asked the Forest Service to consider allowing unplanned wildland fires to burn under specified weather conditions in sensible locations.

Due to the values at risk, existing fuel conditions, and prevailing wind direction, this alternative was dropped from detailed study. Decisions on how to respond to wildfires are made at the time the fires are discovered and sized-up. These decisions are based on site-specific conditions at the time, including but not limited to, location, weather, time of year, and fuel conditions.

The eastern portion of the project area is located within the wildland urban interface (WUI) as identified in the Sanders County Community Fire Protection Plan and in the Lolo National Forest Fire Management Plan. Numerous private residences are located within the project area near the mouth of Clear Creek, and immediately to the north and east of the project area. The project area is also about two miles west of Thompson Falls. Within wildland urban interface areas, the current Forest Plan direction states that the appropriate management response is to suppress all wildland fires using rapid, aggressive initial attack actions. Thus, a full suppression response in WUI areas is expected into the future.

Outside the WUI, the Wildland Fire Decision Support System (WFDSS) process will provide strategic response to wildfires. The WFDSS is the current analysis process used to develop management actions in response to wildfire. However, due to the values at risk associated with ignitions in the project area and the area’s proximity to the community of Thompson Falls, full suppression would be expected on most fires.

Address all deferred or outstanding road maintenance needs/BMP upgrades within the project area

The Clear Creek project area contains approximately 134 miles of roads under Forest Service jurisdiction. About 84 miles of these are system roads and 50 miles are undetermined roads. The Clear Creek project will treat approximately 80 percent of the road miles under Forest Service jurisdiction within the project area with decommissioning, storage, or maintenance (see Table 4).

**Table 4: Road Treatment Summary**

Road Treatment	Miles	Percent of miles under Forest Service jurisdiction within the project area
Decommission	31	23%
Storage	43	32%
Maintenance	33	25%
<b>TOTAL</b>	107	80%

The remaining 27 miles or 20 percent would be left untreated by this project, although undersized culverts on these roads would be replaced. These roads receive periodic maintenance on a priority basis. Of the roads left untreated by the project, only about 5 miles are open and

drivable to public wheeled motorized travel for part of the year. The rest of the roads untreated by the project are closed yearlong to public wheeled motorized travel.

Although the Selected Action will not address all of the deferred road maintenance needs (the bulk of which is roadside brushing) within the project area, it will treat the majority of the road system and address the highest priority needs (e.g. undersized culverts and additional drainage).

An alternative that completes all deferred road maintenance work within the watershed was considered but dropped from detailed study because the remaining maintenance items not addressed by the Selected Action are of low priority and will not contribute to the purpose and need of the project. The Forest Service instead decided to complete road work where other resource benefits (e.g. improved water quality) will be achieved.

## **7.0 Rationale for the Decision**

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I have made my decision based on the information in the Environmental Assessment and the Project File; and consideration of issues and public comments. I have determined my decision is consistent with the Lolo Forest Plan, laws, regulations, and agency policies. My decision is also consistent with the restoration principles developed by the Montana Forest Restoration Committee (see Appendix D of the 2014 EA), which are supported by Forest Service Manual 2020. I have also considered the potential cumulative effects. My decision addresses the purpose and needs of the project as listed above and described in detail on pages 11-15 of the 2014 Clear Creek EA.

### **Meeting the Purpose and Need**

#### *Restore Resilient Forest Conditions*

As stated above in Section 4.0 and in the 2014 EA (page 7), the Forest Service developed this project through collaboration with a diverse group of interested members of the public. I believe the Selected Action responds to the consensus reached by the collaborative group to focus vegetation treatments within previously managed areas in the dry ponderosa pine/Douglas-fir forest types. These areas were determined to be the highest priority for restoring forest stand resilience because they are furthest outside their natural range of variability compared to other areas within the Clear Creek drainage.

My decision authorizes a combination of prescribed burning and mechanical treatments on approximately 2096 acres to lower stand densities favoring fire and disease-resistant species, which will improve forest health, reduce risk of insect predation, and decrease the likelihood of supporting high-severity fire within treated areas. Resultant forest stands will have structures, densities, and species composition that are more adaptable and sustainable over time. All vegetation treatments are designed to be consistent with the restoration scientific literature and local experience with similar treatments in similar forest types. A discussion of the science basis for these restoration treatments is contained within Appendix E of 2014 Clear Creek EA.

If I chose to do nothing, the vegetative conditions in these drier forest types would continue to decline as tree densities increase, putting this area at greater risk to uncharacteristic wildfire

effects and further loss of the ponderosa pine component in this watershed. Because of the area's proximity to Thompson Falls and the value the local community places on the Clear Creek area, I am not willing to take that risk especially since the analysis clearly displays the proposed activities will achieve restoration objectives and will not have significant adverse effects on the environment. The project design incorporated thirty Resource Protection Measures to avoid, minimize, or offset potential adverse effects of project activities, and a monitoring plan has been included to ensure project objectives are met (Appendix D).

#### Improve big game winter range

Approximately 13 percent of the project area is allocated in the Forest Plan to be managed with an emphasis of optimizing forage production for deer and elk on winter range areas. The Selected Action will improve the forage quality on approximately 904 acres of winter range areas within the Clear Creek drainage through prescribed burning and tree thinning. These treatments will increase sunlight to the forest floor and prescribed burning will provide nutrients which will enhance the growth of understory plants. Improving forage conditions for deer and elk will help sustain healthy populations of big game species.

#### Improve Watershed Conditions

Clear Creek is listed as water quality impaired by the State due to sediment and alteration of streamside vegetation. Sediment impairment is from coarse sediment primarily due to bank erosion, both natural and human-induced. In 2009, the State developed a total maximum daily load (TMDL) plan which identified sediment reduction allocations for Clear Creek.

My decision will improve the long-term watershed health and aquatic habitat in Clear Creek as a result of authorized stream work to stabilize streambanks; valley bottom land treatments to enhance the stability of the floodplain; and road maintenance, decommissioning, and storage activities to reduce fine sediment delivery. These activities are consistent with recommendations listed in the TMDL Plan (DEQ 2009). Sediment modeling indicates that these activities will achieve the State's sediment load allocation reduction from forest roads and culverts and contribute to the allocation reduction for human-influenced bank erosion (EA, page 65). Improvements to water quality and stream stability and function will result in an improving trend t fisheries habitat over the long term (EA, page 68).

My staff has completed the previously authorized realignment and associated work of four specific segments of the Clear Creek Road #153, which has accelerated recovery in this watershed. The actions I am authorizing in this decision will complement these accomplished aquatic improvements. They will also add to efforts by the Forest Service and its partners to restore aquatic habitat connectivity and water quality in Prospect Creek and the lower Clark Fork River where human activities and large hydroelectric dams have impacted fisheries.

#### Enhance Recreation

The Selected Action will address identified recreation facility needs within the project area. Currently, the Clear Creek trailhead is located at a wide spot of the Clear Creek road. My decision will expand the trailhead to allow for additional parking and a trailer turn-around. The Selected Action will also relocate portions of the Clear Creek trail to avoid a riparian area and

reduce the grade to bring it up to standard specifications. I believe these improvements will enhance the recreational experience of forest visitors who use the trail.

## **Consideration of Public Comments**

I have reviewed the public comments received on this project. Although, my staff has specifically responded to the comments received on the Clear Creek EA in Appendix A, I wanted to address some of those comments below.

### Temporary road construction

I received some comments concerned about the potential environmental effects from temporary road construction. These comments recommended that no temporary roads be built. After reviewing the analysis in the Clear Creek EA and various resource reports in the Project File, I have decided to authorize the construction of several segments of temporary road (totaling approximately 3 miles) to access vegetation treatment units in order to achieve vegetation objectives. After use, temporary roads will be recontoured and the sites rehabilitated. The analysis indicates temporary road construction will have little, if any, effect on water quality and wildlife species or their habitat. Temporary roads will be located in mid to upper slope locations and contain no stream crossings. To minimize the potential for weed establishment and spread, construction equipment will be cleaned prior to entry into the area and existing and constructed roads will be treated with herbicide as needed. The analysis concludes that temporary road construction will not have a significant effect on the environment due to project design and applied resource protection measures. Without temporary road construction, our ability to meet the vegetative purpose and need will be reduced.

### Maintenance of roads in Inventoried Roadless Areas

I received a comment about the proposal to replace three road culverts in the Clear Creek Inventoried Roadless Area (IRA). The comment expressed the opinion that roads within the IRA should be decommissioned rather than maintained to restore ecological integrity. I did consider an alternative that decommissioned the existing roads within the IRA, but dropped it from detailed study as discussed above in Section 6.0. Inventory of the 9 miles of road within the IRA determined that they are in generally good condition and appropriately located on the terrain to minimize the potential for sediment delivery to Clear Creek. These roads are closed yearlong to wheeled public motorized travel. The replacement of three undersized culverts was identified as a deferred maintenance need on Road 7611. Although the culverts are undersized, there were determined to be of relatively low risk for potential failure. This makes them a fairly low priority compared to other road needs on the Forest. However, I am including this activity in my decision to ensure that it remains identified as a watershed improvement opportunity when funding becomes available.

The Forest Plan currently allocates the land within the Clear Creek Inventoried Roadless Area as suitable for development. The 2001 Roadless Area Conservation Rule does not require the removal of roads within IRAs and allows land management actions under certain circumstances (36 CFR 294.12 and 13). I believe the Forest Plan revision process, which is scheduled to begin in 2016, is the most appropriate scale to re-evaluate IRAs, how they should be managed in the future, and if existing roads should remain or be removed from IRAs. The Forest Plan revision

process will allow for consideration of all IRAs on the Lolo National Forest and for more effective and comprehensive public involvement regarding this controversial issue. Until such time, replacing three undersized culverts with larger structures will improve stream function consistent with Forest Plan direction and the Clear Creek project's purpose and need. I believe replacement of these culverts is not irreversible or irretrievable and does not preclude future management options.

#### Road decommissioning and effects on access

In contrast to the public comment discussed above, I have received several comments throughout the planning process, which expressed concerns that road decommissioning activities would reduce public and administrative access. As described in the 2014 Clear Creek Environmental Assessment (page 112), there will be no net change in the miles of road that can be legally and physically driven by the public. Most of the road miles authorized for decommissioning or storage are already impassable due to vegetation. After careful consideration, roads identified for decommissioning were determined to not be needed for future land management or public access. One of the main reasons is because there are alternate parallel roads that are more suitably located. My staff used field surveys to determine the appropriate level of treatment for each road identified for storage or decommissioning depending on their condition and location. I believe my decision maintains a transportation system that will meet existing and future access needs while addressing potential environmental concerns and budgetary constraints.

#### Effects of timber harvest

I received some comments expressing concern that timber harvest activities to achieve vegetation objectives would adversely affect the environment. One commenter supplied numerous literature citations that he considered as opposing viewpoints to the proposed vegetation treatments outlined in the Clear Creek EA. I have reviewed and considered the literature provided as well as the project analysis summarized in the EA and fully documented within the specialist reports in the Project File. I have determined that the vegetation treatments will not have a significant effect on the environment. The Forest Service response to the supplied literature is in Appendix A and a more thorough explanation of the science basis for the vegetation restoration treatments is contained in Appendix E of the 2014 Clear Creek EA.

### **Other Considerations**

I believe it is important for the Forest Service to support local communities especially where the agency manages a large percentage of the land base as it does here in Sanders County. According to the Montana Department of Labor, Sanders County has one of the highest unemployment rates in the state (9.9 percent as of July 2014) and ranks 54<sup>th</sup> out of the 56 counties. My staff coordinated with local government officials as well as other interested parties during the development of this project. I appreciate the active participation by the Sanders County Commissioners during our planning process. I have decided to proceed with the Selected Action because in addition to achieving the restoration objectives of the project, it will contribute both directly and indirectly to the economy of Sanders County and surrounding areas.

Another consideration in my decision is that harvest treatments will yield various wood products to local and regional forest industries as a by-product of achieving project objectives. In doing

so, the Selected Action will also contribute to the maintenance of a forest industry infrastructure, which provides employment, benefitting local communities, and markets for forest products that result from restoration and other projects. I recognize the need for a strong forest industry to help accomplish forest restoration and other vegetation treatments now and in the future. The forest industry also lowers the direct cost of restoration projects to the taxpayer by providing markets for the wood products that result from these types of projects.

## 8.0 Finding of No Significant Impact ---

After considering the environmental effects described in the 2014 Clear Creek Environmental Assessment (EA), I have determined that the Selected Action will not have a significant effect on the quality of the human environment based on the context and intensity of its impacts (40 CFR 1508.27). Therefore, an environmental impact statement will not be prepared.

I base my findings on the following:

The Selected Action will implement activities that are of limited scope and duration, affecting only the immediate area around the proposed vegetation treatment units. The project will likely be implemented over a period of three to five years. The project was designed to minimize environmental effects through vegetation treatment location, logging methods, silvicultural prescriptions, best management practices, and resource protection measures (EA, pages 37-41; Decision Notice Appendix D). The Forest Service found no significant issues or unresolved conflicts concerning alternative uses of available resources that warrant consideration of additional alternatives. Implementing regulations for NEPA (40 CFR 1508.27) provide criteria for determining the significance of effects. Significance, as used in NEPA, requires consideration of both context and intensity.

**(a) Context.** This 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 would usually depend upon the effects in the locale, rather than the world as a whole. Both short- and long-term effects are relevant (40 CFR 1508.27).

The effects of the Selected Action are limited in context. The project activities are limited in size (watershed enhancements and vegetation treatments including timber harvest, prescribed burning, and other non-commercial vegetation treatments on a total of approximately 2096 acres, which is about 12 percent of the Clear Creek watershed and less than 1/2 of 1 percent of the Plains/Thompson Falls Ranger District) and duration (management actions associated with the proposal will be completed within a 3-5 year time frame). Effects are local in nature and are not likely to significantly affect regional or national resources.

Resource Protection Measures (EA, pages 37-41; Decision Notice, Appendix D) are incorporated into the Selected Action to minimize and avoid adverse impacts to the extent that such impacts would be almost undetectable and immeasurable, even at the local level.

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.

**(b) Intensity.** This refers to the severity of impact. The following ten aspects are considered in the evaluation of intensity (40 CFR 1508.27).

***1. Impacts that may be both beneficial and adverse.***

I considered beneficial and adverse impacts associated with the Selected Action as presented in the 2014 Clear Creek EA. These impacts are within the range of effects identified within the Lolo National Forest Plan. Based on the detailed specialist reports contained within the project file and summarized in the EA, I conclude that the specific direct, indirect, and cumulative effects of the Selected Action are not significant, and this action does not rely on beneficial effects to balance adverse environmental effects.

**No Effects**

Project design and resource protection measures effectively eliminated or reduced to negligible most of the potential impacts, therefore, implementation of the Selected Action will result in no effect to the following resources: amount of old growth forests (EA, page 49); Threatened or Endangered plant (EA, page 57) and wildlife species (EA, pages 79-84); Forest Service Northern Region sensitive species: bald eagle (EA, page 84), peregrine falcon (EA, page 84), common loon (EA, page 84), northern bog lemming (EA, page 84), northern leopard frog (EA, page 84), black-backed woodpecker (EA, page 102), and bighorn sheep (EA, page 84); and Heritage resources (EA, page 111).

**Beneficial Effects**

The Clear Creek EA documents the following beneficial effects of implementing the Selected Action:

- The prescribed burning and tree thinning will improve browse and forage production on big game winter range by removing competing vegetation, returning nutrients to the soil, encouraging shrubs to sprout new shoots, and bringing the shrubs down to browsing height (EA, page 110).
- Commercial thinning and prescribed burning treatments will improve the quality of foraging habitat on about 14 percent of the existing flammulated owl habitat on National Forest System lands within the project area by creating more open stand conditions with large tree components (EA, page 90).
- Herbicide treatments will reduce existing weed populations along roadsides (EA, page 56).
- Vegetation treatments will reduce tree density, which will improve the residual trees' resistance to insects and disease and increase tolerance of drought and wildfire (EA, page 51).

- The replacement of two culverts with larger structures will improve fish passage to an additional 0.6 miles of upstream habitat (EA, page 68).
- In the long-term once project activities are completed, fine sediment delivery from forest roads will be reduced below the existing condition due to road maintenance, decommissioning, and storage treatments near streams. Bank stabilization work will reduce streambank erosion in select locations, decreasing fine and coarse sediment delivery from these sources (EA, pages 61-64). These improvements along with the addition of instream woody debris will benefit fisheries habitat over the long-term (EA, page 68).

### **Potential Adverse Effects**

The Clear Creek EA documents the following potential adverse effects from implementing the Selected Action. All adverse effects would be small or short-lived. None are deemed irreversible or irretrievable and do not set in motion further effects.

Air Quality (EA, pages 54-55): Smoke from prescribed burning contains particulate matter that will temporarily decrease air quality within and downwind of burn units. Effects will be localized and last for a short duration. Proposed prescribed burning will be monitored and controlled by airshed regulations to avoid violation of air quality standards.

Soil Productivity (EA, pages 76-77): The Selected Action will meet Lolo National Forest Plan standards and Regional guidelines for maintaining soil productivity. With the application of Resource Protection Measures, potential detrimental soil disturbance from proposed activities, in combination with existing soil conditions, will not exceed the 15 percent Regional standard within any activity area. Resource Protection Measures and best management practices will be used to minimize soil disturbance and ensure that productivity is maintained. Although all harvest units will meet Region 1 soil quality standards following implementation, the Selected Action will result in about 57 acres (about five percent of the proposed harvest acres and less than on-half of one percent of the project area) of detrimental soil disturbance. Recovery will occur over time and no long-term impacts to soil productivity are anticipated. Monitoring of previously harvested timber sale units on the Lolo National Forest and peer-reviewed research suggest that detrimental soil disturbance dissipates over time and does not irreversibly damage soil (USDA Forest Service Forest Plan Soil Monitoring Reports 2006/2007, 2009, 2010/2011).

Weeds (EA, pages 56-57): Project activities that disturb the soil and/or that create openings in the forest canopy will increase the potential for the establishment and spread of weeds. Based on these factors and the existing forest type, most of the proposed vegetation treatment units have a moderate to high weed risk. Weeds are currently located within and/or adjacent to all proposed treatment areas. Herbicide treatment will be conducted along roads prior to ground disturbing activities and prescribed burning to further reduce existing weed populations within the project area. Additional Resource Protection Measures are incorporated in the Selected Action to reduce the potential for weed establishment and spread (see Appendix D).

Flammulated Owl (EA, page 90): Shelterwood harvest treatments on approximately 103 acres of owl habitat (about 2.3 percent of the suitable flammulated owl habitat on National Forest System

lands within the project area), tree canopy cover will likely be reduced below suitable levels for occupancy by the species as summarized in Samson (2006a). Following shelterwood harvest, these areas would be considered unsuitable habitat for several decades until the areas are regenerated with mature trees. Despite this reduction, the amount of flammulated owl habitat will remain abundant within the project area and across the Lolo National Forest. The Lolo National Forest will still contain about three times the amount of habitat needed to maintain a minimum viable population across the entire Northern Region (Samson 2006a).

Fisheries (EA, pages 66-75): Road-related activities (e.g. maintenance, decommissioning, storage, use, and culvert replacements) occurring near streams and instream rehabilitation work will temporarily increase fine sediment levels during project implementation within Clear Creek due to associated soil disturbance. Haul restrictions and best management practices will be employed to minimize potential effects. In comparison to natural background sediment loads for the entire watershed, this short-term increase will be less than one percent. Over the long-term, these activities will lead to an overall decrease in fine sediment below the existing condition

Project activities would primarily occur during the summer and fall when the middle reach of Clear Creek and several tributaries on the north side of the drainage are dry. Therefore, the timeframe of when potential sediment yield from project activities would most likely enter live water in mainstem Clear Creek is generally in the late spring/early summer during spring runoff. At this time, water flows are high, which typically increases the fine sediment transport capability. Below the intermittent stream reach, about a mile of the main Clear Creek Road #153 is unpaved, which could yield increased sediment inputs at various frequency during haul activities. Project-related sediment delivery could cause a short-term increase in turbidity as fine sediment is entrained in the water column, which may temporarily affect fish movement as they avoid areas of increased turbidity. Any change to turbidity related to project activities would not likely be visible to the human eye except immediately downstream of delivery points. While displacement could occur, no physical harm is expected. Some sediment generated during project activities may temporarily deposit in the bottom of pools in the lower 2.5 miles of Clear Creek until scoured out by the next high spring flow. However, any deposition is unlikely to have a measurable effect to native fish because of the large cobble substrate of the streambed and the relatively small fractional increase in sediment likely to be produced annually from project activities (less than one percent per year relative to existing watershed background loading). Pool habitat would not be adversely affected.

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

All burning of thinning slash and natural fuels will comply with State Air Quality Standards and be coordinated through the Montana Airshed Group.

Herbicide treatments of weeds will comply with label directions and be consistent with mitigation measures outlined in the Lolo National Forest Integrated Weed Management Environmental Impact Statement and Record of Decision (USDA 2007).

It is my determination that by incorporating the Resource Protection Measures for air quality and following herbicide application requirements, the project will have no adverse effects on human health and safety.

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

Although six historic sites are located within the project area, they are not located within or adjacent to any areas where activities are proposed. Thus, the project will have no effect on any known historic site (EA, page 111). The project area does not contain any parklands, prime farmlands, ecological critical areas, or known cultural sites.

The project area does contain wetlands and riparian areas, but they will be protected through resource protection measures (DN, Appendix D), Best Management Practices, and adherence to Forest Plan requirements. Instream work will be performed when the stream is dry and/or during low water periods. All necessary permits will be obtained prior to implementation.

Based on this information, I conclude that the Selected Action 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, review of the public comments received to date, and the analysis documented in the EA and Project File, I do not find any controversial effects to the human environment. In the NEPA context, “highly controversial” does not encompass all public opposition to a proposed action, but instead only applies to a substantial dispute as to the size, nature, or effect of an action.<sup>2</sup>

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

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

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

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

A technical analysis (EA and Project File) that discloses potential environmental impacts (which is supportable with use of accepted techniques, reliable data, and professional judgment) has been completed, and I believe that the impacts of implementing this project are within the limits that avoid thresholds of concern.

**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 Clear Creek project is a site-specific project that does not set precedence for future actions or represent a decision in principle about future considerations. Any proposed future project must be evaluated on its own merits and effects. The Selected Action is consistent with the Lolo National Forest Plan and the capabilities of the land.

**7. *Whether the action is related to other actions with individual insignificant but cumulative significant impacts***

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 future actions. Based on our review of the analysis and disclosure of effects in the EA, specialists' reports, Biological Assessments and Evaluations, and other analyses in the Project Record, I conclude that the Clear Creek project will not contribute potential cumulative adverse impacts (EA, pages 46-117).

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

A comprehensive evaluation of cultural resources was conducted and the Forest archaeologist determined that there would be no adverse effects to known sites (EA, page 111). In the event that such resources are discovered during project implementation, they will be evaluated and protected.

**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***

**Threatened and Endangered Species Determinations**

<b>Species</b>	<b>Determination</b>
Grizzly Bear	No effect
Canada Lynx	No effect
Bull Trout	May affect, likely to adversely affect bull trout and designated critical habitat.
Spaulding's Catchfly (plant)	No effect
Water howellia (plant)	No effect

Of the federally listed Threatened and Endangered species that have the potential to occur on the Lolo National Forest, only bull trout could be affected by project activities. For Clear Creek, and to a lesser degree Prospect Creek, fine sediment may temporarily be increased due to road-related activities near streams and instream rehabilitation work. This increased sediment loading would occur during periods of high runoff (i.e. spring snowmelt and rain storms). Fine sediment delivered to streams under spring runoff conditions is expected to remain in suspension and contribute to turbidity. Turbidity may temporarily reduce bull trout use of affected areas in Clear Creek and to a lesser extent designated critical habitat in Prospect Creek. Because of the rarity of bull trout and the expected very small amount of sediment transported to Clear Creek and the lower two miles of Prospect Creek, it is reasonable to conclude that if juvenile and adult bull trout were present at the time of increased suspended sediment levels they could be displaced. It is not expected that sediment inputs would reach a level where feeding, spawning, or sheltering of bull trout would be impacted. Once activities are completed, culvert removal/replacement, road maintenance, decommissioning and storage, and stream rehabilitation will result in the reduction of long-term sediment delivery in the Clear Creek watershed; thus providing benefits for aquatic species.

As required under Section 7 of the Endangered Species Act, the Forest Service has consulted with U.S. Fish and Wildlife Service (USFWS). The USFWS concluded that the project will not jeopardize the continued existence of bull trout or destroy or adversely modify the bull trout critical habitat in Prospect Creek and the Clark Fork River. Take<sup>3</sup> is not anticipated because 1) bull trout are extremely rare in the action area and 2) increased fine sediment effects will be diluted and/or limited. Approximately 90 percent of temporary project-related sediment inputs will be generated above the intermittent reach of Clear Creek and can only be delivered to occupied habitat during the first flushing spring flows when bull trout are unlikely to occupy the action area. Additionally, high water volume would tend to dilute such project-generated sediment, and the increase of seasonally high natural sediment levels would be difficult to ascertain. Streams within the action provide are foraging, migratory, and overwintering habitat potentially occupied by juvenile to adult bull trout that are less impacted by suspended sediment. Therefore, the Service determined that if bull trout were present in the action area at the time of elevated sediment input, the effect is not expected to rise to a level to disrupt normal behavior patterns such as breeding, feeding, or sheltering to a bull trout even though some adverse effect may happen as a result of displacement.

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

The Selected Action meets all federal, state, and local laws, including those for air quality (EA, page 55), heritage resources (EA, page 111), water quality (EA, page 66), and threatened and

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<sup>3</sup> “Take” is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in such conduct. Harm is further defined by the U.S. Fish and Wildlife Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

endangered species (EA, pages 57, 68-75, and 79-84). It also meets the National Environmental Policy Act disclosure requirements (2014 Clear Creek Environmental Assessment).

The Selected Action is consistent with the National Forest Management Act (NFMA) and the Lolo National Forest Plan. Proposed activities are consistent with the standards, goals, and objectives of Management Areas 13, 16, 17, and 18, as determined in the Forest Plan. This project does not require any Forest Plan amendments.

## **9.0 Findings Required by Law, Regulation and Policy \_\_\_\_\_**

I have determined that my decision is consistent with the laws, regulations, and agency policies related to the project. The following summarizes findings required by major environmental laws.

### **National Environmental Policy Act (NEPA)**

NEPA requires Federal agencies to: (a) use a systematic interdisciplinary approach in planning and decision-making; (b) consider the environmental impact of proposed actions; and (c) consider alternatives to the proposed action. I find that the analysis process and documentation of the Clear Creek project is consistent with NEPA.

### **National Forest Management Act (NFMA)**

#### Consistency with the Forest Plan

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

NFMA requires that projects and activities be consistent with the governing Forest Plan (16 USC 1604 (i)). The Lolo National Forest Plan establishes management direction for the Lolo National Forest. This management direction is achieved through the establishment of Forest Plan goals and objectives, standards and guidelines, and Management Area goals and accompanying standards and guidelines.

This decision is consistent with the standards, goals, and objectives of the Lolo National Forest Plan (USDA Forest Service 1986).

#### Suitability for Timber Production

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

Stands identified for harvest treatment in the Clear Creek project area were examined for suitability by a Certified Silviculturist. Harvest treatments are located in management areas (MA) suitable for long-term timber production (MAs 16 and 18) as described in the Forest Plan. Based on the analysis provided in the EA and project record, the vegetation treatments identified in these areas meet these objectives/standards. The silvicultural diagnosis process and the Forest Plan were used to determine that all areas identified for timber harvest are suitable.

### Timber Harvest

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

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

The interdisciplinary planning team fully assessed the potential effects of timber harvest on soil and water resources and determined there will be no measurable effect to water quality and Regional soil quality guidelines and Forest Plan standards will be met. Their analysis is documented within the Hydrology and Soil reports in the Project File and summarized in the Environmental Assessment on pages 60-66 and 75-79).

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

Regeneration harvest (shelterwood harvest) is prescribed for Units 1B, 4, 11, 16D, 16E, 27A, 29, 30, 31B, 31C, and 60 (approximately 247 acres) primarily because of existing mortality of the Douglas-fir trees from root disease. Ponderosa pine, western white pine, and western larch, which are resistant to this disease, will be planted in the openings within the five year timeframe. Successful reforestation of these areas given adequate site preparation and animal damage control is assured based on observations, experience, and analysis of similar sites. The other harvest units will be thinned and remain adequately stocked.

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

The timber harvest will have no measurable effects on water conditions or fish habitat (EA, pages 61-74). Application of BMPs and riparian buffers will protect water resources from harvest activities. The timber harvest activities associated with the Selected Action will comply with the Clean Water Act, Montana State Water Quality standards, and the Lolo National Forest Plan.

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

The purposes of the harvest treatments for this project are to improve forest health and resiliency. In treatment units prescribed for commercial timber harvest, generally the smaller understory or codominant trees will be removed and the larger, more disease and fire resistant trees will be left on site.

### 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.*

No clearcutting is authorized in this decision. Even-aged regeneration harvest (shelterwood cutting) will occur on an estimated 247 acres. This method has been determined to be an appropriate method to meet land management and project objectives. This treatment method will primarily occur where the Douglas-fir trees are infected with root disease.

- 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.*

Refer to the 2014 Clear Creek EA and project file. Full interdisciplinary review has been completed for this project. All treatments meet a portion of the multiple use goals and objectives in the Lolo Forest Plan for designated Management Areas.

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

As seen on the map in Appendix B, cutting units are shaped so that they blend with the natural terrain.

- 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)).* All harvest activities in my decision are within the maximum size limitations. Refer to the 2014 EA, page 4.

- 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.* Documentation of the effects on other resources is contained in the 2014 Clear Creek EA and project file. Protection of all resource values is maintained. All sites considered for treatment will use established harvest and fuel reduction methods. Treatments are designed to sustain and perpetuate native seral species. Resource Protection Measures (Appendix D) and applicable Best Management Practices will be sufficient to protect soil and water resources.

### Stands of trees are harvested according to requirements for culmination of mean annual increment growth

Shelterwood harvest will occur within stands that are mature and have achieved mean annual increment. Stand density and root disease have reduced the growth in many of these stands. My decision meets the stated requirements.

### Necessity of Roads

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

A transportation plan was completed for the project area. It analyzed the current and future transportation needs. I have authorized the construction of 1 short segment of long-term specified road totaling approximately 0.25 miles to connect two existing roads and allow for the decommissioning of about 1 mile of road. This segment will be placed into long-term storage following implementation of the project. This road will be located in Forest Plan management area 16, which allows road construction. Several harvest units will require short segments of temporary road (a total of approximately 3 miles) to provide access to vegetation treatment areas. Temporary roads will be reclaimed following use (refer to Resource Protection Measure #13 in Appendix D). Roads were carefully located and designed to minimize potential environmental effects while providing necessary access (refer to the 2014 Clear Creek EA and resource specialists’ reports in the Project File). In addition, Best Management Practices will be applied to further minimize potential effects.

Based on these actions and the analysis documented in the EA, I have determined the project meets the intent of the NFMA road requirements.

### NFMA Diversity

The NFMA specifies that land management plans provide for diversity of plant and animal communities based on the sustainability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives, preserve the diversity of tree species similar to that existing in the region (16 USC 1604 (g)(3)(B)). The Forest Plan contains an array of components that contribute to the plant and animal (terrestrial and aquatic) habitat capability of the Lolo National Forest. Based upon consideration of these components of the Forest Plan, the resource protection measures in this Decision (Appendix D), the Biological Assessments/Evaluations, and the analysis in the EA, I find this decision will continue to provide for a diversity of native species.

### **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. Biological assessments (BA), which disclose effects of the project on

threatened and endangered species, were prepared by Forest Service biologists with the following ESA determinations:

- Grizzly Bear – no effect (Wildlife Report, page 35; EA, page 83)
- Canada lynx – no effect (Wildlife Report, page 38; EA, page 80)
- Bull trout and critical habitat – likely to adversely affect (Fisheries Report, page 58; Fisheries Biological Assessment (BA), pages 47 and 55; EA, page 69)
- Water howellia and Spaulding’s catchfly – no effect (Botany BA, page 2; EA, page 57)

#### Bull Trout and Bull Trout Critical Habitat

The fisheries biological assessment determined the project “may affect, is likely to adversely affect” bull trout in Clear and Prospect Creeks due to a short-term increase in sediment from road-related activities (decommissioning, storage, maintenance, and haul) and stream rehabilitation work. In addition, since critical habitat was designated by the USFWS in October 2010, the biological assessment also determined the project “may affect, is likely to adversely affect” designated critical bull trout habitat in Prospect Creek downstream of the project area although no known spawning areas would be affected. However, once project activities are completed, fine sediment delivery from roads and bank erosion within Clear Creek will be reduced below existing levels which would benefit aquatic species over the long-term (see Section 8.0 above). As required under Section 7 of the Endangered Species Act, the Forest Service has consulted with U.S. Fish and Wildlife Service. The USFWS concluded that the project will not jeopardize the continued existence of bull trout or destroy or adversely modify the bull trout critical habitat in Prospect Creek and the Clark Fork River (see Appendix E for more detailed information about the U.S. Fish and Wildlife Service’s determination).

#### **Migratory Bird Treaty Act**

The project record shows that neotropical migratory birds are considered in accordance with the MOU with the USFWS on the Migratory Bird Treaty Act. The analysis of the bald eagle, black-backed woodpecker, flammulated owl, northern goshawk, and pileated woodpecker, all species protected under the Migratory Bird Treaty Act also demonstrates compliance.

#### **Clean Water Act and State Water Quality Standards**

Upon review of the Clear Creek EA and the hydrology and fisheries reports in the Project File, I find that the activities associated with the Selected Action will comply with the Clean Water Act and Montana State Water Quality standards through application of best management practices. All required permits will be acquired prior to implementation.

Due to pending litigation and potential regulations changes it was uncertain during the development of the Clear Creek project whether any National Pollution Discharge Elimination System (NPDES) permitting requirements were applicable to stormwater discharges from logging roads. However on December 7, 2012, the Environmental Protection Agency published a final rule in the Federal Register to revise its stormwater regulations to clarify that NPDES permits are not required for stormwater discharges from logging roads. In addition, on March 20, 2013, the Supreme Court ruled that stormwater discharge from logging roads is not industrial

point-source pollution and consequently does not require NPDES permits under the Clean Water Act.

## **Clean Air Act**

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

## **National Historic Preservation Act**

A comprehensive evaluation of cultural and historic resources was conducted and no adverse effects to these resources are expected. The six known historic sites within the project area are not located within or adjacent to any areas where activities are authorized to occur (EA, page 111). The Selected Action is consistent with Forest Plan direction and Section 106 of the National Historic Preservation Act.

## **2001 Roadless Area Conservation Rule**

The 2001 Roadless Area Conservation Rule (Roadless Rule) was the subject of litigation in multiple jurisdictions. Ultimately, the Rule was judicially upheld and it is in effect, with the exceptions of the States of Idaho and Colorado where separate rules apply. See *Wyoming v. U.S.D.A.*, 661 F.3d 1209 (10th Cir. 2011) (upholding 2001 Roadless Rule); *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094 (9th Cir. 2002) (reinstating Roadless Rule); *Jayne v. Sherman*, No. 11-35269 (9th Cir. Jan. 7, 2013) (upholding Idaho Roadless Rule).

About 33 percent of the National Forest System lands within the Clear Creek project area is located within the Clear Creek Inventoried Roadless area (IRA) (refer to map in Appendix B). In the Lolo Forest Plan, most of the land within this IRA is allocated to Management Area 16 (timber management), with relatively small parcels of MA 18 (big game winter range and timber management); MA1 (non-forest); and MA 27 (forest land where timber management is not economically or environmentally feasible at this time due to physical features of the land).

Activities within the Clear Creek IRA include prescribed burning on 96 acres, rerouting approximately 2000 feet of trail; placing approximately 3.3 miles into long-term storage, decommissioning about 0.75 miles of road; and replacing 3 culverts on system roads. Although not foreseen at this time, incidental cutting of small diameter trees may occur as part of these activities. Any cut trees would be left on site. This tree cutting would meet the Roadless Rule exemption in 36 CFR 294.13(b)(ii)(2), which allows the cutting of timber if it is incidental to the implementation of management activities not otherwise prohibited by this subpart. Trail relocation, prescribed burning, and road decommissioning, storage, and maintenance are not prohibited under the Roadless Rule. These activities will meet the purpose and need for the project as described in Section 3.0 of this document. All activities prescribed within Inventoried the Roadless Area are consistent with the Forest Plan and the 2001 Roadless Conservation Rule, and will have no notable effect on roadless characteristics (EA, pages 115-117).

I received one comment on the Clear Creek Environmental Assessment concerned about the maintenance of existing roads (specifically the replacement of 3 culverts on Road 7611) within the IRA. The 2001 Roadless Rule defines road maintenance as “the ongoing upkeep of a road necessary to retain or restore the road to the approved road management objectives” (36 CFR 294.11). Culvert replacement fits within this definition. The Roadless Rule allows maintenance of classified roads in inventoried roadless areas (36 CFR 294.12(c)).

I reviewed the project with the Deputy Regional Forester on July 30, 2014. He concurred that the action meets the 2001 Roadless Rule exception and review requirements outlined in the May 31, 2012 letter from the Chief.

## **10.0 Pre-decisional Administrative Review Process (Objection Process) and Implementation**

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A draft Decision Notice was issued in December 2013, 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 Missoulian newspaper on December 6, 2013. One objection was received. The objection was reviewed by the Regional Forester (reviewing officer) who has responded in writing to the concerns raised by the Objector in a letter dated March 7, 2014. I have satisfied the requirements under 36 CFR 218.12(b) by addressing the instructions identified by the reviewing officer (see Section 1.0). Implementation may begin immediately.

Further information about this decision can be obtained from District Ranger Randy Hojem or Pat Partyka, Project Leader, during normal office hours (weekdays, 8:00 a.m. to 4:30 p.m.) at the Plains/Thompson Falls Ranger District Office (Address: 408 Clayton St, P.O. Box 429, Plains, Montana 59859; Phone: (406) 826-3821).



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TIMOTHY GARCIA  
Forest Supervisor

*September 2, 2014*

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Date

## **APPENDIX A**

### **Response to Comments on the Environmental Assessment**

In August 2012, the Clear Creek Environmental Assessment was mailed to individuals and organizations that had previously commented on or expressed interest in the project. The 60-day comment period on the EA began with the publication of legal notice in the *Missoulian* newspaper on September 7, 2012. On September 27, 2012, the Forest Service held a public meeting to provide additional information and answer questions. Three people attended the meeting. At the close of the comment period, 5 comment letters had been received:

Letter 1: Mark Sheets

Letter 2: Doug Ferrell, Montana Wilderness Association

Letter 3: Sanders County Commissioners

Letter 4: Jeff Juel, The Lands Council

Letter 5: Dick Artley



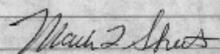
Sept. 8, 2012

USDA Forest Service  
Plains / Thompson Falls Ranger Dist.  
P.O. Box 429  
Plains, MT 59859

RE: Clear Creek Project EA + Draft Finding  
of No Significant Impact

After reviewing the EA + Draft Finding of  
no significant impact, I support Alternative 2  
(modified Proposed Action). It is a very balanced  
proposal that supports many forest uses. It will  
improve conditions for wildlife, recreation, vegetation,  
watershed and transportation. It will also produce jobs  
and raw material for the local saw mills.

Sincerely,



MARK L. SHEETS

Thompson Falls, MT, 59873

FOREST SERVICE RESPONSE

←1

**Response to Comment #1:** Thank you for your comments of support.



<p>11/5/2012</p> <p>Randy Hojem District Ranger Plains/Thompson Falls Ranger District Lolo National Forest</p> <p>I would like to submit some comments on the Clear Creek Environmental Assessment, on behalf of the Montana Wilderness Association. MWA is a grassroots conservation organization founded in 1958. We have some 5500 members. Our mission statement reads "We work with communities to protect Montana's wilderness heritage, quiet beauty, and outdoor traditions, now and for future generations." We often participate in planning for projects like this, in order to provide input into project design, to support the many good projects proposed by the Forest Service, and to be a good neighbor in our communities.</p> <p>I have reviewed this project with care. I attended an informational trip into the project area, and an additional meeting or two. I have spent some time in the project area as well, hiking and driving. I have reviewed the EA and Draft FNSI with care.</p> <p>We support this project as proposed, identified as Alternative 2. We note that the project includes some significant timber harvest, some significant wildlife habitat improvement, and decommissioning of 32 miles of roads not needed for future use. The project is expected to decrease sediment entering Clear Creek over time. The project includes no road building or timber harvest within the Clear Creek Roadless Area. It does include prescribed burning on some 96 acres within the IRA.</p> <p>We want to thank you for your thoughtful and thorough development of this project, and for your efforts to seek public involvement, and carefully consider the comments and suggestions you have received.</p> <p>Thank you for the opportunity to comment.</p> <p>Doug Ferrell President, Montana Wilderness Association Trout Creek, MT 59874</p>	<p>←1</p>	<p>FOREST SERVICE RESPONSE</p> <p><b>Response to Comment #1:</b> Thank you for your comments of support. The Forest Service sincerely appreciates your participation in the collaborative effort on this project.</p>
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# SANDERS COUNTY BOARD OF COMMISSIONERS

November 5, 2012

Project Leader  
Thompson Falls Ranger District  
P.O. Box 429  
Plains, MT 59859  
Comments: nothern-lolo-plains-thompsonfalls@fs.fed.us

RE: Clear Creek Project

To: Project Leader/Thompson Falls Ranger District

The Sanders County Commissioners appreciate the opportunity to comment on the proposed Clear Creek Project. Our National Forests need to be actively managed. Years of fire suppression and a poor timber industry have left many forests in tough shape with a greater potential for massive fires. We feel that if done properly through prescribed fire, mechanical thinning, and other management activities that the forests can be much improved.

The Clear Creek Project has many appealing aspects that include improved big game habitat, improved water quality, enhanced recreational facilities, and increased forest health through timber harvest which also helps to improve our local economy by putting people to work. We need to have more projects developed locally that lead to efficient natural resource development.

Our only area of concern would be the decommissioning of roads. While we could agree with decommissioning some jammer roads, all other roads being considered for decommissioning should simply be placed in storage so that the public can continue to use them for hunting or seasonal firewood gathering. Also, these roads can be used in the future for forest management activities or fire suppression access.

It is obvious that a lot of work went into developing this well rounded project that will accomplish a lot of positive things and the Commissioners are proud to give our approval and ask that this project and others like it move forward as quickly as possible.

Sincerely,

Board of Commissioners  
Sanders County, Montana

Anthony B. Cox, Presiding Officer  
District No. 3

Carol Brooker, Commissioner  
District No. 1

absent  
Glen E. Magera, Commissioner  
District No. 2

P.O. BOX 519, 1111 MAIN ST, THOMPSON FALLS, MT. 59873  
PHONE: (406) 827-6966 • FAX: (406) 827-4368  
EMAIL: KBATES@SANDERSCOUNTY.MT.GOV

## FOREST SERVICE RESPONSE

←1

←2

**Response to Comment #1:** The Forest Service recognizes the concern of many county residents regarding the potential loss of motorized access on public lands. As described in the original Clear Creek Environmental Assessment (page 65) and updated 2014 EA (page 100), there will be no net change in the miles of road that can be legally and physically driven by the public. Most of the road miles proposed for decommissioning or storage are impassable due to vegetation. After careful consideration, roads proposed for decommissioning were determined to not be needed for future land management or public access. One of the main reasons is because there are alternate parallel roads that are more suitably located (please see map in Appendix B of the Decision Notice).

**Response to Comment #2:** Thank you for your comments of support.

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November 5, 2012

Randy Hojem, District Ranger  
 Plains/Thompson Falls Ranger District  
 POB 429  
 Plains, Montana 59859

Dear Randy,

These are comments on the Clear Creek Project Environmental Assessment (EA), on behalf of The Lands Council and Alliance for the Wild Rockies.

Our groups are strongly in support of forest restoration, and that is why our scoping comments began by reinforcing your statement in the scoping notice that said that the project was to be "...developed to be consistent with the 13 Restoration Principles developed by the Montana Forest Restoration Committee." Our scoping comments stated, "Given our interest and involvement with moving along collaborative processes, we are very interested in reading a detailed analysis of how the (Clear Creek project proposal is) consistent with each of those 13 Restoration Principles." So we are disappointed that the Clear Creek EA contains absolutely no mention of the 13 Restoration Principles, which were developed by such a diverse collective of interests, including representatives from the Lolo National Forest.

That said, we are glad that the Forest Service (FS) preferred alternative increased the amount of road decommissioning and long-term storage over that in the original proposal, as well as the number of culverts to be up-sized or removed. Practically nothing is less sustainable on our national forest lands than a road network for which the FS chronically receives inadequate funding for maintenance. We do note, however, some mis-prioritization of some of the proposed work.

The FS raises a huge red flag any time it proposes to maintain roads in roadless areas rather than use the NEPA process to recognize roadless areas as the best places where sustainability of the LNF and project area road network can be achieved by road decommissioning. We specifically note the three culvert replacements proposed in Stick Gulch, rather than decommissioning of these road segments, located on steep sideslopes. The EA states that "The Roads Analysis completed for the Clear Creek project identified the minimum road system needed to manage the landscape as outlined in the Forest Plan." (EA at 22.) We fail to see how the EA justifies a "need" to keep any of the roads in the Clear Creek IRA. Nothing in the EA discloses how any anticipated future management activities within the IRA would be consistent with the Roadless Rule.

The EA dismisses consideration of an alternative that would prioritize roadless values because "...the Lolo Forest Plan designates this area as suitable for

FOREST SERVICE RESPONSE

←1 **Response to Comment #1:** In an effort to maintain a concise format for the original EA, the review of the project's consistency with the MFRC's restoration principles was omitted during editing of the document. The updated 2014 Clear Creek EA includes discussion of these principles (pages 7-8, and Appendix D).

←2 **Response to Comment #2:** The Forest Plan allocates the Clear Creek Inventoried Roadless Area as suitable for development (original EA, pages 22 and 66; 2014 EA, pages 18, 44, and 113). As stated, the Roads Analysis process identified a minimum road system to manage the landscape consistent with Forest Plan guidance. The 2001 Roadless Area Conservation Rule does not require the removal of roads within IRAs and allows land management actions under certain circumstances (36 CFR 294.12 and 13). The Roadless Rule also allows road maintenance, which includes culvert replacement, within inventoried roadless areas (36 CFR 294.12(c)).

The Forest Plan revision process is the most appropriate scale to re-evaluate Inventoried Roadless Areas as it would provide a comprehensive, forest-wide review of all IRAs with full public involvement. Until such time, replacing three undersized culverts with larger structures will improve stream function consistent with Forest Plan direction and the Clear Creek project's purpose and need. This action is not irreversible or irretrievable and does not preclude future management options.

<p>timber management.” As if, since 1986, there has been no public outcry over FS willy-nilly invasion of roadless lands, culminating in adoption of the Roadless Rule. The EA goes on to say that “approximately 75 percent of the area was leased for oil and gas and several mining claims were located within the IRA. The majority of these leases and claims are still in place.” The fact that leases and claims might still remain is not a justification for the roads to remain. The fact that leases and claims remain is not a justification for the public to be forced to invest scarce restoration dollars just to help keep mining interests’ foot in the door by replacing culverts and maintaining roads in an IRA. Did the FS build 9 miles of road in this IRA since 1986 because of mining interests? It’s been over a quarter-century since the antiquated forest plan was written; now is the time to steer management emphases for IRAs in the right direction.</p> <p>Such prioritization errors could have been avoided if the FS had gone ahead and developed the Clear Creek project to be consistent with the 13 Restoration Principles. Virtually without exception, science is finding that ecological integrity remains highest in areas that remain unroaded and unmanaged and is lowest in areas that have been roaded and managed. As the density of roads increases, aquatic integrity and wildlife security decreases, while the risk of catastrophic wildfire and the occurrence of exotic weeds increases. The simplest and most cost-effective thing the Forest Service can do to maintain and restore aquatic and ecosystem integrity is to stop building roads and to obliterate in an environmentally sound manner as many roads as possible.</p> <p>We also fail to see how 2.5 miles of “temporary” road is really needed. Temporary roads involve most of the negative impacts of permanent roads, and nothing in the EA’s analysis shows that the increment of vegetation treatments accessed by these temporary roads makes them justified.</p> <p>Nowhere does the EA disclose the funding needed to maintain the current road system, the project area road system or the minimum road system in either the Clear Creek area or across the Lolo National Forest. It seems clear that the Project will not provide adequate funding to build and fully maintain either the current road system, the project area road system, or the minimum road system.</p> <p>Although BMPs may reduce the effects of roads on watersheds:  Practices that reduce the effects of roads to the watershed, are not a static condition. Ecological processes, traffic and other factors degrade features such as ditches, culverts, and surface water deflectors. Maintaining BMP standards for roads requires ongoing maintenance. Continual monitoring and maintenance on open roads reduces risks of sediment delivery to important water resources.</p> <p>(USDA Forest Service 2010t.) Landscape-specific restoration plans must consider long-term maintenance needs. It is difficult to support a management regime that isn’t clearly based on an ecological prioritization of restoration needs. The failure to either provide adequate funding to fully maintain the road system, or to reduce the system to a size that is adequately funded, will also result in unmitigated impacts to other forest resources including but not limited to terrestrial wildlife such as elk, species dependent on old forests and snags out of reach of firewood cutters, and rare and threatened species such as lynx, fisher, and grizzly bear.</p> <p>As a justification for the propose timber harvest, the EA states:</p>	<p>←3</p> <p>←4</p> <p>←5</p> <p>←6</p>	<p><b>Response to Comment #3:</b> The description of oil and gas leases and mining claims in the original EA on page 22 was not intended to provide rationale for the existence of the roads within the IRA. This description displayed one of the reasons that the Clear Creek IRA was ranked low for possible wilderness designation through an evaluation conducted during the development of the Forest Plan in the mid-1980s. This low ranking is the reason the IRA was allocated as suitable for development in the 1986 Forest Plan. Most of the roads were constructed in the early 1990s to provide access for vegetation management activities as most of the area in the IRA is allocated to Management Area 16 (timber management) in the Forest Plan.</p> <p><b>Response to Comment #4:</b> The current road density within the Clear Creek IRA is 1.05 miles/mile<sup>2</sup>. As stated above, the majority of the roads located within the IRA were constructed in the early 1990s to design standards. According to recent surveys, these roads are in generally good condition except for the identified undersized crossings and brush encroachment along some segments. These roads are currently closed yearlong to public wheeled motorized traffic. Road closures maintain wildlife security and minimize the potential for human-caused fire ignitions and weed seed movement by vehicles. The roads are located in mid to upper slope locations with generally low sediment contribution potential except at stream crossings. The culverts on roads to be stored will be removed. Three culverts on roads that will remain will be replaced with larger structures. The Clear Creek project will decommission approximately 8 percent of the road miles within the IRA and store another 37 percent. Please also see response to #3 above.</p> <p>The Clear Creek project is consistent with the Montana Forest Restoration Committee’s restoration principles (see EA, pages 7-8 and Appendix D).</p> <p><b>Response to Comment #5:</b> Approximately 3 miles of temporary road comprised of multiple segments ranging in length from 400 to 2600 feet are needed to provide access to approximately 275 acres (25 percent) of the mechanical vegetation treatment units. This access will facilitate a more comprehensive treatment of the ponderosa pine and Douglas-fir forest types across the landscape to meet restoration objectives. Temporary roads will be decommissioned following use for this project. Their footprint will affect less than one tenth of one percent of the Clear Creek drainage. The potential effects of temporary roads are summarized in the EA and are more thoroughly discussed in the resource reports in the Project File. Because of the temporary roads’ relatively small footprint, location, and short duration, their potential effects are not considered significant.</p> <p><b>Response to Comment #6:</b> The Clear Creek project will treat approximately 80 percent of the road miles under Forest Service jurisdiction within the project area with decommissioning (24%), storage (32%); and maintenance (25%). Although the project will not address all of the deferred road maintenance needs (the bulk of which is brushing) within the project area, it would treat the majority of the road system and address the highest priority needs (e.g. undersized culverts and additional drainage). The Forest Service considered an alternative that addressed all road maintenance needs within the project area but dropped it from detailed study because the remaining maintenance items not addressed by the project are of low priority and will not contribute to the purpose and need for the project (EA, page 45; DN, pages 20-21). The Forest Service instead prioritized work where it would achieve other resource benefits (e.g. improved water quality).</p>
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<p>Over the last century, vegetation within Clear Creek has been growing relatively undisturbed with the exception of some past timber harvest, lodgepole pine tree mortality caused by mountain pine beetles, and Douglas-fir tree mortality from root disease. The forest that developed in the last 100 years now forms a continuous uniform cover.</p> <p>It is hard to understand, or agree with, what the EA is talking about here. On the following page (and included in the emailing of these comments) is a Google Earth image of the Clear Creek watershed, showing neither a continuous canopy nor a “relatively undisturbed” landscape. Nowhere does the EA utilize any metrics to describe the alleged “continuous uniform cover” as compared to what it would be if it didn’t need restoration. This comes off as simply canned language like that the FS universally uses to justify timber sales in forests already unsustainably logged.</p> <p>The EA states:          Within the Prospect Total Maximum Daily Load (TMDL) and Water Quality Restoration Plan (2009), the State identifies several priority restoration activities for the Clear Creek drainage to reduce overall sediment including culvert replacements (upgrades), riparian vegetation and weed treatment, road decommissioning and closure, and road and trail maintenance and application of best management practices.</p> <p>(EA at 3.) However, the EA does not provide enough detail for the public or decisionmaker to determine if the proposed action responds adequately to the “Prospect TMDL Plan (2009).” And given the disclosures in the Clear Creek EA about how improving water quality is of utmost importance for Prospect Creek, the choice by the FS to not prepare an EIS to analyze all foreseeable management actions (including the Antimony project) in this “priority bull trout watershed” (including bull trout critical habitat) results in noncompliance with NEPA, NFMA, and the Endangered Species Act.</p> <p>It also makes no sense to allow logging in ephemeral draw buffers. What are “designated crossings” (EA at 18) of ephemeral draw buffers, and how can allowing machines within them avoid sediment into streams during storm events or snowmelt?</p> <p>The draft FONSI states that “All necessary permits would be obtained prior to implementation” but does not disclose what permits would be necessary prior to ground disturbing activities. This is required by NEPA.</p> <p>The EA states a p. 39: “When all activities are considered, modeling indicates that Alternative 2 would achieve TMDL loading allocation reduction from forest roads and culverts; and contribute to the allocation reduction for human-influenced bank erosion.” What is the percentage of error in such sediment estimates for the project? The EA is vague on the issue of project induced quantities of sediment delivery from the logging and road building, separate from the watershed restoration actions.</p> <p>“Unpaved forest roads located in close proximity to streams and/or that cross streams is identified as another source of sediment.” Regarding sediment delivery and Clear Creek Road #153, what <u>quantifiable metrics</u> does the analysis utilize that can demonstrate that the road can be maintained consistent with important goals such as the TMDL and aquatic forest plan direction such</p>	<p>←7</p> <p>←8</p> <p>←9</p> <p>←10</p> <p>←11</p> <p>←12</p> <p>←13</p>	<p><b>Response to Comment #7:</b> Vegetation treatments are focused in the low to mid-elevation ponderosa pine and Douglas-fir forests that include mostly warm, dry to moderately dry habitat types. Field surveys and historic aerial photographs suggest that these dry forest types contain higher tree densities outside of their natural range of variability. Please see the EA, pages 11-13 for further clarification of the vegetation purpose and need.</p> <p><b>Response to Comment #8:</b> The EA (pages 64-65) summarizes the findings on pages 42-43 of the hydrology report contained within the Project File, which demonstrate the project will achieve the TMDL loading allocation reduction from forest roads and culverts.</p> <p><b>Response to Comment #9:</b> Consistent with 36 CFR 220.4(f) and Council on Environmental Quality guidance, past, present, and reasonably foreseeable future actions (including the Antimony project) were considered for analysis of cumulative effects (EA, pages 46-48). The determination of whether to complete an EIS is based on a finding of significant effects on the human environment (40 CFR 1501.4(e) and 40 CFR 1508.13). The Finding of No Significance in the Decision Notice documents that the direct, indirect, and cumulative effects of the Clear Creek project are not significant and the action does not rely on beneficial effects to balance adverse environmental effects (DN, page 26). Thus, the completion of an EIS is not warranted. Both the Antimony and Clear Creek projects will result in reduced sediment delivery to Prospect Creek in the long term contributing to an improving trend in water quality and fisheries habitat within Prospect Creek. As stated in the EA (page 74), the Antimony project located about 9 miles upstream in Prospect Creek is ongoing. The biological determination for the Antimony project is that it may affect but is not likely to adversely affect bull trout or designated critical habitat due to a negligible probability for “take” of bull trout or destruction/adverse modification of critical habitat because:</p> <ul style="list-style-type: none"> <li>• Tributaries to Prospect Creek where project activities are occurring only connect to mainstem Prospect Creek during spring runoff when no project activities are ongoing</li> <li>• The three miles of Prospect Creek within the project area goes subsurface for 9-10 months out of the year during the period when activities will be occurring</li> <li>• The project area is five miles upstream of known spawning areas and separated from those spawning areas most of the year by the 3-mile dry segment of Prospect Creek. Project-generated sediment flushed during spring runoff will be diluted before it reaches the spawning area</li> <li>• Duration of project activities is relatively short (2-3 years).</li> </ul> <p>The U.S. Fish and Wildlife Service concurred with this finding (Antimony Decision Notice, pages 13-14). Short-term sediment loads generated by the Antimony project would be so diluted by the time they reached the segment of Prospect Creek below Clear Creek that there would be little if any effect to native fish and their habitat. Therefore, the potential cumulative effects from the short term increase in sediment loads resulting primarily from watershed improvement activities occurring within the same bull trout subpopulation would be insignificant (Clear Creek EA, page 74). The USFWS determined that the Clear Creek project will not jeopardize the continued existence of bull trout or result in the destruction or adverse modification of critical habitat (Clear Creek Decision Notice, pages 31 and 36, and Appendix E). The Clear Creek project is consistent with National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), and the Endangered Species Act (Decision Notice, pages 32-36).</p> <p><b>Response to Comment #10:</b> An ephemeral draw is a topographic low point on a hillslope that does not run water and is vegetated with upland species (moist site species may be present in isolated locations). There is no evidence of deposition or scour in any of the ephemeral draws within proposed Clear Creek harvest units indicating that flow and sediment transport is not occurring. Any overland flow or sediment movement would be captured in draw microsites including the forest floor, vegetative groundcover, and behind down woody material. Ephemeral draws found within Unit 15 are relic features from the filling and draining of Glacial Lake Missoula. In units W1 and W2, the draws are related to channel meandering (Clear Creek) and past flood events. Finally, ephemeral draws are not mentioned as needing buffers in the Lolo Forest Plan, Montana BMPs, or Fisheries guidelines. The Forest has agreed to protect these features from equipment operations as an additional constraint to harvest system operations. Trees may be felled to lead and removed from an ephemeral draw buffer which is a 50-foot No-Equipment buffer (EA page 40; DN Appendix D; Soil report page 16). The intent is to prevent use of the draws for either skyline corridors (EA page 37; DN Appendix D) or tractor skid trails (EA page 40; DN Appendix D). Crossing the draws at locations designated by the Timber Sale Administrator allows for the efficient harvest of the unit and helps to limit equipment footprints (i.e., less skid trail distance, efficient skid trail layout and usage). Crossings are kept to a minimum and are located where draw sideslopes are low and equipment gouging would be minimal.</p> <p><b>Response to Comment #11:</b> The Lolo National Forest participates in the 124 permit process with Montana Fish, Wildlife, &amp; Parks when Forest construction projects affect any streambed and/or banks (Hydrology report, page 8). Due to pending litigation and potential regulations changes it was uncertain during the development of the Clear Creek project whether any National Pollution Discharge Elimination System (NPDES) permitting requirements were applicable to stormwater discharges from logging roads. However on December 7, 2012, the Environmental Protection Agency published a final rule in the Federal Register to revise its stormwater regulations to clarify that NPDES permits are not required for stormwater discharges from logging roads. In addition, on March 20, 2013, the Supreme Court ruled that stormwater discharge from logging roads is not industrial point-source pollution and consequently does not require NPDES permits under the Clean Water Act. (DN, pages 36-37).</p> <p><b>Response to Comment #12:</b> The sediment models used for the Prospect TMDL assessment completed by Montana DEQ and the Clear Creek project assessment completed by the Forest Service simplify extremely complex physical systems and are developed from a limited database. They are widely accepted and provide reasonable interpretation and prediction tools in the dynamic forest environs. All findings should be considered in trend and general magnitude comparisons and should not be considered absolute values (Hydrology report, page 2). Section 4.4 of the Hydrology report (pages 22-26) discusses the sediment models used in the analysis and their uncertainty. Figure 4 in the 2014 EA (page 62) displays that timber sale related activities by themselves and also in combination with other watershed restoration work will reduce modeled fine sediment from roads below existing conditions following completion of the project. The timber-sale related activity that reduces sediment delivery from roads is the application of Best Management Practices through maintenance of roads used for the timber sale. In summary, the watershed restoration work is not required to offset potential sediment delivery from timber sale related activities. The Hydrology (pages 34-37, 39-40) and Fisheries (pages 30-42) reports in the project file display predicted sediment yields by activity type in more detail. Modeled short-term fine sediment increases are relatively small in comparison to the modeled existing conditions within the project area.</p> <p><b>Response to Comment #13:</b> Road maintenance is included in the project for which Best Management Practices apply and are monitored for their effectiveness. Monitoring results on the Forest and in other studies support that employed practices are effective (Fisheries report, page 34). As displayed in the EA (pages 2 and 61) and the Hydrology</p>
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<p>as INFISH and Riparian Management Objectives (RMOs)?</p> <p>The EA to fails to disclose measures of consistency with RMOs, and doesn't explain how management will result in the RMOs ever being attained where they currently are not.</p> <p>The EA states at p. 22, "...full suppression would be expected on most fires." Yet on p. 27 under Effects Common to All Alternatives it also states, "Within the Clear Creek project area, wildland fire will continue to serve as a natural disturbance factor." The FS needs to reconcile these two conflicting statements, and perform a cumulative effects analysis of its fire suppression policies—how those effects play out on the Forest and in the project area.</p> <p>We believe the science is unequivocal—the forest won't be restored without allowing wildland fire in locations not adjacent to private land/structure, and without incorporating some prescribed fire in the latter riskier locations. Without the natural process of fire, the suite of ecological damages associated with the substitution of mechanical treatments will continue long-term adverse impact on the watersheds and terrestrial habitats. This leaves the door open to comprehensive restoration being subservient to timber volume production.</p> <p>The Ninth Circuit Court of Appeals ruled that the Forest Service "must both describe the quantity and quality of habitat that is necessary to sustain the viability of the species in question and explain its methodology for measuring this habitat." (<i>Lands Council v. McNair</i>). Assuring viability of most wildlife species is forestwide issue. The cumulative effects of carrying out multiple projects simultaneously across a national forest makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992; also see Ruggiero et al., 1994a). The LNF Forest Plan Standards are not based upon scientific research regarding the forestwide amount and distribution of habitat needed to insure viability of old-growth associated wildlife. Furthermore, the LNF maintains no forestwide old-growth inventory.</p> <p>The failure to inventory old growth is not merely a paperwork exercise. The pileated woodpecker, and northern goshawk are LNF Management Indicator Species (MIS) associated with mature to old growth forest habitats, and apparently the FS has not documented any successful reproduction in the Clear Creek watershed. This exacerbates our viability concerns caused by the Forest Service's continuing failure to conduct forest plan-required population trend monitoring. The fisher, black-backed woodpecker, and flammulated owl are three of the Sensitive species that rely heavily upon the structure found in old growth. All such species would see habitat degraded by this timber sale and other cumulative management activities, and have their viability further threatened.</p> <p>We believe that Reynolds et al. 1992 supports maintaining 60% of the forest in northern goshawk post-fledging areas in the <u>oldest</u> large tree medium- to closed-canopy conditions. We cannot tell if the EA would prioritize maintaining the <u>oldest forest</u> available in post-fledging areas, for example.</p> <p>The black-backed woodpecker is quite distinguishable because its habitat is comprised predominately of insect infested or burned over stands. "Insect infestations and recent wildfire provide key nesting and foraging habitats" for the black-backed woodpecker and "populations are eruptive in response to</p>	<p>←14 report (page 35), four segments of Road 153 that are adjacent to Clear Creek have already been realigned to provide space to create a vegetated floodplain between the road and the creek. Large wood was also placed to reduce bank erosion by dissipating water energy. The sediment analysis predicted these activities will result in a 30 ton reduction of chronic streambank erosion over a 9 year period. However, this did not consider the reductions from eliminating the risk of fill slope washout or stream capture, which has occurred in the past and is at risk of occurring again if not remedied. Total sediment savings of a magnitude higher are very probable; therefore a more comprehensive long-term sediment budget would be something on the order of a 100-500 ton reduction from acting proactively to reduce road-stream conflicts and typical failures (Hydrology report, pages 35-36).</p> <p><b>Response to Comment #14:</b> The existing condition for aquatic habitat in Clear Creek was determined through surveys conducted in 2003-2009. Physical habitat data for Clear Creek are disclosed in the Fisheries report (pages 6-21) and Biological Assessment (pages 13-18). In summary, habitat conditions appear to have deviated from desired conditions (mean reference conditions) but most habitat parameters in Clear Creek are, at the very least, within the range of reference conditions. Project activities will not retard the attainment of Riparian Management Objectives (Fisheries report, pages 58-62; and Biological Assessment, pages 43-46). Project activities including the placement of instream woody debris, stabilization of streambanks in key locations, and road maintenance, decommissioning, and storage to reduce road-related sediment delivery below baseline conditions are expected to result in an upward trend for aquatic habitat parameters over the long term (Biological Assessment, pages 37-38).</p> <p>←15 <b>Response to Comment #15:</b> The Clear Creek project includes prescribed burning on a total of approximately 18301 acres or about 10 percent of the Clear Creek drainage (679 acres of prescribed burn only and 1151 acres of prescribed burning following timber harvest activities). Review or modification of the Forest's fire policy is not part of this project.</p> <p>←16 <b>Response to Comment #16:</b> Habitat estimates for maintaining viable populations have been completed at the Regional and Forest scale for the northern goshawk, black-backed woodpecker, flammulated owl, pileated woodpecker, and fisher (Samson 2006b). Comparison of habitat required for a species specific minimum viable population to that available indicates well-distributed habitat far in excess to that needed, given the natural distribution of species and their habitats as mapped by the Montana Natural Heritage Program, Idaho Birdnet, and the scientific literature. The quantity and quality of habitat within the Clear Creek project area for each species is discussed in the Wildlife report, as well as the methodologies to determine habitat amounts. The EA (pages 79-111) summarize the findings in the Wildlife report that the Clear Creek project, by itself or in consideration of cumulative effects with other projects, will not lead to a loss of viability for any species.</p> <p>←17 <b>Response to Comment #17:</b> No vegetation management activities will occur within existing old growth forest as defined by Green et al.1992, errata corrected 2005 (EA, page 49). Although some remnant old trees are present within the area, they occur randomly at densities of less than two trees per acre, in very small pockets (less than 1/10th acre). The Selected Action will retain these remnant old trees. A Forest-wide old growth analysis using Forest Inventory and Analysis (FIA) data (Czaplewski 2004) shows the Lolo National Forest continues to meet the old growth strategy of the Forest Plan (EA, page 50). The estimated percentage of old growth (using the more restrictive definition provided by Green et al. 1992 (errata corrected 2005) on all forested lands on the Lolo National Forest is 9.6 percent (Bush et al. 2007) with a 90 percent confidence interval of 7.7 percent to 11.5 percent, well above the 8 percent Forest Plan old growth strategy (Lolo Forest Plan EIS, page II-61).</p> <p>←18 <b>Response to Comment #18:</b> Broad-scale forest and regional habitat and population estimates indicate that viability is secure for goshawks and pileated woodpeckers and that they are widely distributed (Samson 2006). Population trend monitoring for pileated woodpeckers has occurred through the neo-tropical migratory bird surveys. Surveys indicate populations are stable and the species is common in most habitats on the Lolo National Forests. Goshawk population surveys conducted in the Northern Region (including the Lolo National Forest) suggest goshawks are common and widely distributed in the roaded (or more managed) portions of National Forest System lands in Region 1 (Kowalski et al. 2006). Results were consistent with Clough (2000) and McGrath et al. (2003). Goshawk researchers have found no evidence that goshawks are declining in the western United States (Kennedy 1997, Squires and Kennedy 2006) and Samson (2006) demonstrated that goshawk habitat was well-distributed and abundant in Region 1. Goshawks were detected during surveys conducted in 2008 and 2010 in the Clear Creek area. The 2010 detection was a pair of birds during the breeding season. Although a nest was not found, incidence of breeding and reproduction was likely. Pileated woodpeckers were observed in nearly all survey transects conducted in and around the Thompson Falls area, close to the project area. Pileated woodpecker foraging sign was identified within the Clear Creek project area (EA, page 104). As stated above, pileated woodpeckers are widely distributed and viability is secure.</p> <p>←19 <b>Response to Comment #19:</b> No vegetation management activities will occur within existing old growth forest as defined by Green et al.1992, errata corrected 2005 (EA, page 41).</p> <p>Black-backed woodpeckers are not specifically associated with old growth forest. They occupy forested habitats that contain high densities of recently dead and dying trees, which primarily wood borer beetles have colonized (Dixon and Saab 2000; Powell 2000). The Clear Creek project does not propose harvest activities within these habitats, thus the project will have no impact on this species (EA, page 103; Wildlife report, pages 63-64). The Lolo National Forest contains abundant suitable habitat for black-backed woodpecker, several times the amount needed to support a viable population across the entire Northern Region (Samson 2006b) (EA, page 103). Please also see response to #21 below.</p> <p>←20 Fishers are most likely to occur in complex and diverse wetter stands with an abundance of dead, downed wood and layers of overhead cover. Proposed harvest areas are located within dry ponderosa pine/Douglas-fir forest types in previously managed areas, which constitutes less suitable fisher habitat. Commercial harvest activities will occur on a modest 6 percent of modeled suitable (although low quality) fisher habitat within the project area. The Selected Action will not contribute to a loss of viability because the potential to affect even one individual fisher is low due to their naturally rare and wide distribution and naturally limited amount and distribution of habitat; no activities will fragment wet forest types; riparian forest areas will be maintained; coarse woody debris and snags will be retained consistent with the Forest Plan; there will be no change to trapping pressure or effects to population linkages because drivable, open road density will remain unchanged; and fisher habitat is abundant and well-distributed on the Forest and Region to maintain viable fisher populations (Samson 2006b). (EA, pages 98-99).</p>
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<p>these occurrences” (Wisdom et al. 2000). A basic purpose of the Clear Creek project is to negate the natural occurrence that the black-backed woodpecker biologically relies on; the emphasis in reducing the risk of stand loss due to stand density coupled with the increased risk of stand replacement fire events. This emphasis is likely a large portion of the Forest. How is viability of a species to be assured, if habitat suppression is to be a forestwide emphasis via the forest plan?</p> <p>The EA does not demonstrate compliance with direction in the Northern Rockies Lynx Management forest plan amendment, nor does it address the issue of lynx critical habitat.</p> <p>Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of regulatory mechanisms to adequately address the soils issue. We note that the Forest Service soil quality standards’ areal extent percentage limits are based on feasibility of timber sale implementation rather than concerns over soil productivity; and additionally we have the bulk density increase limit is based upon the limitations of detection by FS bulk density measuring methods—again, <u>not concerns over soil productivity</u>.</p> <p>The FS’s soil proxy—its determination that it may permanently damage the soil over 15% of an activity area and still meet NMFA and planning regulations—is arbitrary. The EA does not cite any scientific basis for adopting its percent numerical limits. Page-Dumroese et al. 2000 emphasize the importance of validating soil quality standards using the results of monitoring:</p> <p>The EA does not provide enough quantitative analysis to insure that project activities would be consistent with forest plan or regional soil standards. The EA fails to disclose how increase in detrimental disturbances or bulk densities were measured for previously logged units, leaving the methodology subject to question. Further compromising soil productivity in the LNF is the failure to adequately address the spread of noxious weeds, which have the potential effect of reducing site productivity by replacing natural vegetation and competing with same for soil nutrients, moisture, etc.</p> <p>Kuennen et al. 2000 (a collection of Northern Region soil scientists) also agree. They state:</p> <p>An emerging soils issue is the cumulative effects of past logging on soil quality. Pre-project monitoring of existing soil conditions in western Montana is revealing that, where ground-based skidding and/or dozer-piling have occurred on the logged units, soil compaction and displacement still are evident in the upper soil horizons several decades after logging. Transecting these units documents that the degree of compaction is high enough to be considered detrimental, i.e., the soils now have a greater than 15% increase in bulk density compared with undisturbed soils. Associated tests of infiltration of water into the soil confirm negative soil impacts; the infiltration rates on these compacted soils are several-fold slower than rates on undisturbed soil.</p> <p>...The effects of extensive areas of compacted and/or displaced soil in watersheds along with impacts from roads, fire, and other activities are cumulative. A rapid assessment technique to evaluate soil conditions related to past logging in a watershed is based on a step-wise process of aerial photo interpretation, field verification of subsamples, development of a predictive model of expected soil conditions by</p>	<p>←21 The flammulated owls in the Northern Rockies have been found primarily in low to mid elevation montane forests containing structural characteristic associated with older forests. Habitat estimates indicate flammulated owl habitat on the Lolo National Forest is three times the amount needed to maintain a minimum viable population across the entire Northern Region (Samson 2006b). The Selected Action will not lead to a loss of viability because suitable habitat will be maintained on all but 2.3 percent of the existing habitat on National Forest System lands within the project area and habitat is abundant across the Forest (EA, pages 89-91). The Selected Action will improve the quality of foraging habitat on about 14 percent of the existing flammulated owl habitat on National Forest System lands within the project area.</p> <p>←22 <b>Response to Comment #20:</b> A post-fledgling area (PFA) surrounds a nest area. Although a pair of goshawks was observed in 2010 over a mile from the nearest proposed vegetation treatment unit, no nests have been detected within the Clear Creek project area. Thus, no PFAs have been identified and no PFA assessments were conducted. There is approximately 3033 acres of goshawk nesting habitat within the Clear Creek project area which is 3-5 times more than what is recommended in the scientific literature (Reynolds et al. 1992) (EA, page 106-109; Wildlife report, page 16-21). Proposed vegetation treatments overlap a modest 11 percent (332 acres) of the total available nesting habitat. Treatments would retain the largest trees. Treated nesting habitat would remain suitable on all but 93 acres which would be shelterwood harvested. Shelterwood harvest will retain the largest trees, but the canopy cover will likely be reduced to 10-30 percent, less than what is considered suitable for nesting habitat. However, the amount of remaining nesting habitat could support more goshawk nests than the territorial nature of goshawks would tolerate. Thus after completion of the vegetation treatments, available nesting habitat will still be approximately 3-5 times more than what is recommended in the scientific literature. Nesting habitat will remain widely distributed across the Clear Creek area and likely available to any arrangement of goshawk home ranges that may exist on the landscape (EA, page 107; Wildlife report, pages 19-20).</p> <p>←23 <b>Response to Comment #21:</b> Vegetation treatments are proposed on 12 percent of the 18,223-acre Clear Creek project area. One of the purposes of these treatments is to reduce the risk of stand-replacing wildfire within dry ponderosa pine/Douglas-fir forest types that historically were not typically affected by high severity fire. The purpose is not to eliminate fire from the landscape. Treatments will leave stands in a condition that would support low and mixed-severity fire, more consistent with historic patterns (EA, pages 50-54). Regional assessments indicate viability is not a concern for the black-backed woodpecker because:</p> <ul style="list-style-type: none"> <li>• A comparison of habitat required for a minimum viable population to that available indicates well-distributed habitat far exceeds that needed, given the natural distribution of the species and their habitats as mapped and according to the scientific literature (Samson 2006b).</li> <li>• Evidence suggests the black-backed woodpecker is increasing in numbers in the United States (as cited in Dixon and Saab 2000). No demographic information exists to suggest a decline in woodpecker numbers.</li> <li>• Black-backed woodpecker habitat in the Northern Region is abundant and well-distributed across the Region and Lolo National Forest.</li> <li>• Habitat for the black-backed woodpecker has recently increased and amounts are expected to increase as fires and bark beetle outbreaks continue to increase in size (Gallant et al. 2004, Hessberg and Agee 2003, Hessberg et al. 2004).</li> <li>• The level of salvage timber harvest of the forest landscape in the Northern Region is insignificant (Samson 2006a).</li> </ul> <p>←24 <b>Response to Comment #22:</b> Although approximately 103 acres of prescribed burning only treatments (Units 84, 85, and a small portion of Unit 89) and 18 acres of timber harvest (a small portion of Units 16A and 16E) are proposed within the mapped Upper Prospect Lynx Analysis Unit, no activities will occur within lynx habitat. Proposed activities will occur primarily within warm, dry ponderosa pine and Douglas-fir forest types which are not considered suitable habitat for lynx because they are too warm and dry to support important habitat components for lynx and adequate snowshoe hare populations, on which lynx feed (Wildlife report, page 37). The Clear Creek project is consistent with the standards outlined in the Northern Rockies Lynx Management amendment (EA page 80 and Appendix F). As noted in the EA (page 80), this Decision Notice (page 16), and Wildlife report (page 36), there is no lynx critical lynx habitat designated within the Clear Creek project area or on the Plains/Thompson Falls Ranger District of the Lolo National Forest (Federal Register 2009:74 FR 8616).</p> <p>←25 <b>Response to Comment #23:</b> The Soil report in the Project File follows Regional Guidelines for soil analysis as specified in Forest Service Manual (FSM) 2500-99-1.</p> <p>←26 <b>Response to Comment #24:</b> The Soil report in the Project File follows Regional Guidelines for soil analysis as specified in FSM 2500-99-1. At no point has the Forest Service determined that projects may permanently damage 15 percent of the soil in an activity area. The management goal is to limit disturbances to the greatest extent possible and when necessary apply mitigation, restoration, and corrective actions so that the extent of detrimental conditions following implementation of all activities is at or below the Regional Standard (Soil report page 38). A discussion of soil productivity, the Region 1 soil quality standards (R1 SQS), and NFMA can be found in Soil File 4 and the Soil report pages 5-6.</p> <p>It should be noted that the Lolo National Forest Soil Scientist is a field going position. The Soil Scientist or a crew trained and checked by the Soil Scientist gets out on the ground evaluating the R1 SQS, soil productivity, and NFMA within a site-specific context. Tools used during this analysis include guidance in FSM 2500-99-1 as well as soil function tables, ecological indicators, and landscape characteristics (Soil Files 2, 3, Soil report pages 4-6, 9). If there are interpretation questions, additional soil and ecological specialists are brought in as was the case for Clear Creek (Soil File 8).</p> <p>Monitoring is an integral part of the Lolo NF Soil Program. Summarized results can be found in the Soil report (pages 23-24) with a discussion of the Lolo NF Soil Monitoring Program in Soil File 4. Monitoring of previously harvested timber sale units on the Lolo National Forest suggested that in units 35 to 45 years old, detrimental soil disturbance appeared to have dissipated. The monitoring and subsequent data analysis, demonstrates that initial detrimental disturbance resulting from ground-based timber harvesting diminishes over time without active reclamation, and initial detrimental disturbance does not irreversibly damage activity area soils. Further the monitoring shows that detrimental disturbance greater than 15% did not necessarily result in impairment of productivity.</p> <p><b>Response to Comment #25:</b> Field soil disturbance survey protocols and soil productivity protocols are discussed in the Soil report (pages 4-6, 9) and in Soil Files 2 and 3.</p>
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<p>timber stand, application of this model to each timber stand through GIS, and finally a GIS summarization of the predicted soil conditions in the watershed. This information can then be combined with an assessment of road and bank erosion conditions in the watershed to give a holistic description of watershed conditions and to help understand cause/effect relationships. The information can be related to Region 1 Soil Quality Standards to determine if, on a watershed basis, soil conditions depart from these standards. Watersheds that do depart from Soil Quality Standards can be flagged for more accurate and intensive field study during landscape level and project level assessments. This process is essentially the application of Soil Quality Standards at the watershed scale with the intent of maintaining healthy watershed conditions (Kuennen et al., 2000; emphasis added).</p> <p>USDA Forest Service, 2009c states:          Compaction can decrease water infiltration rates, leading to increased overland flow and associated erosion and sediment delivery to streams. Compaction decreases gas exchange, which in turn degrades sub-surface biological activity and above-ground forest vitality. Rutting and displacement cause the same indirect effects as compaction and also channel water in an inappropriate fashion, increasing erosion potential.</p> <p>Booth, 1991 further explains the relationship between soil quality conditions and hydrology:          Drainage systems consist of all of the elements of the landscape through which or over which water travels. These elements include the soil and the vegetation that grows on it, the geologic materials underlying that soil, the stream channels that carry water on the surface, and the zones where water is held in the soil and moves beneath the surface. Also included are any constructed elements including pipes and culverts, cleared and compacted land surfaces, and pavement and other impervious surfaces that are not able to absorb water at all.</p> <p>...The collection, movement, and storage of water through drainage basins characterize the hydrology of a region. Related systems, particularly the ever-changing shape of stream channels and the viability of plants and animals that live in those channels, can be very sensitive to the hydrologic processes occurring over these basins. Typically, these systems have evolved over hundreds of thousands of years under the prevailing hydrologic conditions; in turn, their stability often depends on the continued stability of those hydrologic conditions.</p> <p>Alteration of a natural drainage basin, either by the impact of forestry, agriculture, or urbanization, can impose dramatic changes in the movement and storage of water. ...Flooding, channel erosion, landsliding, and destruction of aquatic habitat are some of the unanticipated changes that ...result from these alterations.</p> <p>...Human activities accompanying development can have irreversible effects on drainage-basin hydrology, particularly where subsurface flow once predominated. Vegetation is cleared and the soil is stripped and compacted. Roads are installed, collecting surface and shallow subsurface water in continuous channels. ...These changes produce measurable effects in the hydrologic response of a drainage basin.</p> <p>The Ninth Circuit addressed a very analogous situation in <i>Lands Council v.</i></p>	<p>Field-derived detrimental soil disturbance data is disclosed in the EA (Appendix C), the Soil report Appendix C, and Soil File 5. Soil productivity is discussed in the Soil report (pages 31-37). Existing soil condition is summarized in the Soil report, pages 10-14.</p> <p>Methodologies associated with monitoring and evaluations characterizing existing soil disturbances are based on extensive collaboration; the Forest Service Rocky Mountain Research Station in cooperation with the Northern Region led the effort. The development of the soil assessment protocol (Page-Dumroese et al. 2009) has been guided by suggestions from a large number of regional soil program leaders, forest soil scientists, research soil scientists, university professors, and British Columbia Ministry of Forest And Range Soil Scientists. This document displays confidence intervals and associated standard errors inherent with these methodologies.</p> <p>Noxious weeds are considered in every action (for example EA page 38: Soil #13, where weed management provides partial rationale for harvesting over snow/frozen ground or leaving a slash mat, and there are numerous weed resource protection measures in the EA Chapter 2 and Decision Notice Appendix D). The Lolo NF Integrated Weed Management (LNFIWM) Record of Decision and FEIS is incorporated into this analysis by reference (December 2007). Noxious weed long-term establishment can alter physical and biological functions of the ecosystem by displacing native vegetation. The extent of the displacement is discussed in the Weeds and Threatened, Endangered, and Sensitive Plants sections of the EA (EA pages 55-60).</p> <p>The Forest Service uses a strategy to reduce the potential for weeds to influence productivity: 1) prevention (washing equipment, weed free erosion control materials, treating areas before an activity, etc.); 2) early detection (monitoring for two or three growing seasons after the activity (EA page 43; DN Appendix D)); and 3) controlling the weed population (spraying, bio-control, soil stabilization measures, re-vegetation of disturbed sites, and re-vegetation of constructed temporary roads, etc.). Each weed infestation encountered in this project would be evaluated to determine the most effective and least impactful (to non-target plants and resources) weed control technique from a weed management toolbox.</p> <p>←27 <b>Response to Comment #26:</b> Soil survey protocol and analysis techniques are found in the Soil report and Soil File 3.</p> <p>←28 <b>Response to Comment #27:</b> These effects are acknowledged and stated in the Soil report.</p> <p><b>Response to Comment #28:</b> The Soil report (pages 6-7, 10) acknowledges this interconnection; basin hydrology is discussed in both the Hydrology report and the Fisheries report.</p>
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*Powell*, where the FS proposed more logging in a watershed that was no longer properly functioning because of the effects of past logging. As the Court noted in that case, “(c)umulative effects analysis requires the (EIS) to analyze the impact of a proposed project in light of that project’s interaction with the effects of past, current, and reasonably foreseeable projects... (Here) there is no discussion of the connection between individual harvests and the prior environmental harms from those harvests that the Forest Service now acknowledges.” (Id., at 1027.) By analogy, the same failure of analysis for soil productivity is evident for soils in the Clear Creek EA.

We appreciate the opportunity to comment on the Clear Creek EA. We urge the FS to give these comments more consideration than those provided during the scoping period, which seem to have been largely ignored. Please keep both groups on the list to receive further notifications on the proposal.

Sincerely,



Jeff Juel  
The Lands Council

...and on behalf of:  
Michael Garrity  
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USDA Forest Service, 2009c. Lakeview-Reeder Fuels Reduction Project Draft Environmental Impact Statement. Priest Lake Ranger District, Idaho Panhandle National

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**Response to Comment #29:** Cumulative effects analysis is found in the Soil report at the ends of Sections 6.1 and 6.2 (No Action and Action Alternatives, respectively). The cumulative effects analysis area as defined in the R1 SQS is found on pages 6-7 of the Soil report. As stated on pages 5, 11-13 of the Soil report, the existing soil condition is a factor of many variables which include soil characteristics but also the soil moisture content during any previous entries, the type of equipment used, and the operator’s skill. These factors need to be evaluated site-specifically, which is what occurs on the Lolo NF (refer to Response #24).

Existing soil disturbance assessments pick up the effects of past actions within the survey boundary (Soil Report pages 10-14, Soil File 2). The Lolo Forest Soil Scientist collects additional data to determine the soil biological, physical, and hydrologic function (Soil File 3). This information is used to write the existing condition and analyze the effects of the alternatives. It should be noted that the Lolo NF Soil Scientist walks recently harvested units in the area to get a baseline for soil recovery and resiliency. For the record, no proposed harvest units were found to have impaired soil function; the only two units with impaired soil function are W1 and W2. Full analysis and soil rehabilitation of these units is found in Soil File 8 (including reports from the consulting soil scientist and ecologists). W1 and W2 are discussed in the EA on page 33, DN on pages 3-4, and the Soil report (pages 14-16, 46). Rehabilitation plans are found in Appendix 8 of the Soil report.

<p>Forests. January 2009.</p> <p>USDA Forest Service 2010t. Travel Analysis Report, Spring Gulch Travel Analysis, Cabinet Ranger District, Kootenai National Forest, 2010.</p> <p>Wisdom, Michael J.; Richard S. Holthausen; Barbara C. Wales; Christina D. Hargis; Victoria A. Saab; Danny C. Lee; Wendel J. Hann; Terrell D. Rich; Mary M. Rowland; Wally J. Murphy; and Michelle R. Eames. 2000. Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications. General Technical Report PNW-GTR-485 United States Department of Agriculture Forest Service Pacific Northwest Research Station United States Department of the Interior Bureau of Land Management General Technical Report PNW-GTR-485. May 2000</p>		
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September 25, 2012

Dear Ranger Hojem,

I have reviewed the pre-decisional EA and Draft Finding of No Significant Impact for the Clear Creek Project.

As a communal owner of the Lolo National Forest I am saddened that the Responsible Official is proposing to cause long-term harm to my natural resources using my tax dollars to prepare this corporate-friendly project.

**The Opposing Views Attached to these Comments Describe the Harm Inflicted to the Forest Ecosystem caused by Logging and Road Construction**

The attachments to these comments present the “responsible” opposing views of hundreds of independent, unbiased Ph.D. biological scientists who describe the resource damage caused by the majority of commercial timber and road construction sale activities taken at any location, on any topography, at any elevation, at any time.

The Responsible Official’s response to each of these opposing views is governed by 40 C.F.R. § 1502.9(a) and 1502.9(b). You will not like these 2 laws but I’d suggest reading them anyway. They will spoil your beliefs that the pesky public must not interfere when you propose to pillage their forest for corporate gain.

This member of the public has provided the electronic links to the source documents for each opposing view.

**Comment:** Please include these opposing view source documents in the References section of the final EA. When describing the environmental effects of the timber sale activities to the countless natural resources in the project area please cite the resource damage described in the source documents contained in the attachments.

**Comment:** It violates the law to give the public a skewed (one sided) description of the environmental effects of a proposed project as you have done in this preliminary EA. I suggest you become familiar with the meaning of “hard look.” You should also read the Administrative Procedures Act.

Selectively citing USFS employee-authored literature because it supports the project and rejecting other non-USFS authored literature that explains the massive resource damage caused by logging is worse than unethical. You will immediately realize the need to

**FOREST SERVICE RESPONSE**

←1

**Response to Comment #1:** The Forest Service has reviewed the literature citations and has provided a response in the table that follows this letter.

←2

**Response to Comment #2:** Forest Service personnel used the best available science in their environmental assessment of the potential effects of project activities. References used include science-based documents published by both Agency and non-Agency researchers. Refer to the resource specialist reports in the Project File.

<p>include some of the opposing views source documents contained in <b>Attachments #1 and #4</b>.</p> <p><b>Comment:</b> The opposing views quoted in <b>Attachment #1</b> were authored and/or signed by 237 different unbiased Ph.D. biological scientists with no connection to the USDA.</p> <p><b>Comment:</b> The opposing views quoted in <b>Attachment #4</b> were authored and/or signed by 52 different unbiased Ph.D. biological scientists with no connection to the USDA. They indicate that road construction inflicts more resource damage than any logging-related activity.</p> <p><b>Comment:</b> Ranger Hojem after reading the opposing views attachments you will be uneasy. At first you will be obsessed with inventing reasons to devalue and show that the opposing views do not pertain to the Clear Creek timber sale. A common response to the opposing views is that they are “not relevant to the project because the source documents for the opposing views are not specific to the project at hand.</p> <p><b>Comment:</b> Ranger Hojem, if you reject any of the literature in the attachments to this comment letter because it’s not site specific.</p> <hr/> <p><b>The Local Public will Soon become Aware that the Responsible Official Places Higher Importance on Volume Accumulation than Public Safety</b>  The pre-decisional EA at page 22 states:</p> <p>“The eastern portion of the project area is located within the wildland urban interface (WUI) as identified in the Sanders County Community Fire Protection Plan and in the Lolo National Forest Fire Management Plan. Numerous private residences are located within the project area near the mouth of Clear Creek, and immediately to the north and east of the project area. The project area is also about two miles west of Thompson Falls.”</p> <p>Clearly <b>THE</b> most important responsibility of a public land manager is to protect the safety of the public living near national forest land should a wildfire occur. Fuels reduction timber sales have become a favorite of line-officers. They supply volume and they provide good PR with the lay public.</p> <p>However, hazardous fuels reduction projects are <b>not</b> the most effective way to reduce the risk of fire damage to homes in the WUI ... yet the USFS does it anyway. Why? It’s an</p>	<p>←3</p> <p>←4</p> <p>←5</p>	<p><b>Response to Comment #3:</b> Agency responses to the literature cited in Attachment #1 is contained in the table following this letter.</p> <p><b>Response to Comment #4:</b> In the Clear Creek project, road construction is very limited in scale and the longevity of newly constructed roads is of short duration. The Clear Creek project will construct about 1000 feet of long-term specified road to connect two existing parallel roads to facilitate the decommissioning of about a mile of existing road (see map in Decision Notice Appendix B). This new road segment will be placed into long-term storage following use for this project. The project will also construct approximately 3 miles of temporary road consisting of multiple segments that range in length from about 400 to 2600 feet. Temporary roads will be constructed to minimal standards and be decommissioned following use for this project. Decommissioning will include replacing excavated soils back onto the road prism to return the ground to its natural contour, placing woody debris on the disturbed area, and seeding the disturbed soil. The Forest Service has reviewed the literature cited as opposing views in Attachment #4. The primary issues in these opposing views are:</p> <ul style="list-style-type: none"> <li>• sediment contribution to streams  In the Clear Creek project, new construction (long-term specified and temporary) will be located in mid to upper slope locations on stable soils and contain no stream crossings and thus is not likely have any measurable effect on water quality (EA, page 63).</li> <li>• increased water yield  In the Clear Creek project, new road construction (long-term specified and temporary) will affect less than 1/10<sup>th</sup> of one percent of the drainage which will not result in any measurable effect to water yield (Hydrology report, page 38).</li> <li>• fragmentation of terrestrial and aquatic habitats  In the Clear Creek project, newly constructed roads will be located away from streams and will not fragment or otherwise affect aquatic habitats. Newly constructed roads will also not measurably affect terrestrial habitat because they are of limited length located in close proximity to existing roads; and they will have limited duration since temporary roads will be decommissioned and the 1000 feet of long-term specified road will</li> </ul>
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<p>excuse to log merchantable trees to achieve volume expectations. You know this Ranger Hojem.</p> <p>Line-officers that consider personal advancement a higher priority than the safety of the public have no business being called public servants.</p> <p>Bush and Rey did a number on the American public when they sent the HFRA to congress. The USFS line-officers have learned to exempt timber sales from appeal by declaring it an HFRA sale because it's a sale to remove hazardous fuels. Since all vegetation in the forest will burn a line officer can analyze any commercial timber sale using the HFRA process, line-officers often violate the Appeals Reform Act of 1992 with impunity.</p> <p>Dr. Jack Cohen is a USFS fire physicist working in Missoula, Montana. He has devoted his entire working career researching methods to reduce the risk of fire damage to homes located in the WUI. If you aren't familiar with Dr. Cohen's research, please see opposing views <b>attachment #11</b>. Also opposing views <b>attachment #3</b> provides many scientific reasons detailing why fuels reduction does not reduce WUI fire damage risk.</p> <p>Dr. Cohen's fire damage risk reduction methods are the most effective that exist. He does not recommend logging merchantable trees near the WUI as is being proposed with this commercial timber sale (a.k.a. a fuels reduction project). This is why he is a black-sheep in the USFS. The USFS does not want the public to learn about Dr. Cohen's research because this would eliminate another excuse to commercially log the national forests.</p> <p>Dr. Cohen recommends removing fine flash fuels within a few hundred feet of a home at risk. That's why kindling is used to start a fire in the fireplace,</p> <p>If the final EA for the Clear Creek project does not analyze a Dr. Cohen alternative <u>in detail</u> it will be necessary to inform the public in your area about Dr. Cohen's fire risk reduction methods myself.</p> <p>A Cohen alternative will:</p> <ul style="list-style-type: none"> <li>• educate the public with written material that summarizes Dr. Cohen's findings and public meetings to answer questions.</li> <li>• educate the public using USFS organized public meetings to answer questions and distribute information.</li> </ul>	<p style="text-align: center;">←6</p> <p style="text-align: center;">←7</p>	<p>be stored following use for this project.</p> <ul style="list-style-type: none"> <li>• increased human disturbance to wildlife During implementation of the Clear Creek project, the general public will not have access on new roads. After the project is completed, newly constructed roads will be stored or decommissioned and will not be passable to motorized vehicles. Thus, following project completion, human disturbance levels will return to pre-project levels.</li> <li>• roads are vectors for weeds The EA acknowledges the increased risk of weed establishment and spread which is why specific resource protection measures have been prescribed to minimize this potential (EA, pages 38-39, and 56; Decision Notice Appendix D).</li> </ul> <p>The Clear Creek project will reduce the footprint and environmental impact of the existing road system by maintaining needed roads (33 miles); treatment of weeds along roadways; remedying fish passage barriers caused by undersized stream crossings; decommissioning unneeded roads (31 miles or 24 percent of the road miles under Forest Service jurisdiction); and storage of roads identified as needed for long-term access but not in the short-term (43 miles or 32 percent of the road miles under Forest Service jurisdiction).</p> <p><b>Response to Comment #5:</b> The purpose of the Clear Creek project does not include fuels reduction to reduce the risk of fire damage to homes in the wildland urban interface (see EA, pages 11-15).</p> <p><b>Response to Comment #6:</b> The Clear Creek project is not proposed under the Healthy Forests and Restoration Act (HFRA).</p> <p><b>Response to Comment #7:</b> Dr. Cohen's research does not apply to the Clear Creek project because the project purpose does not include fuels reduction to reduce risk of fire damage to homes located within the wildland urban interface (see EA, pages 11-15). The Forest Service has reviewed the literature cited in Attachment #3 and has provided a response in the table following this letter.</p>
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- offer USFS labor to help elderly and disabled people living in the WUI (with their written permission) to remove the fine fuels near their home as Dr. Cohen suggests.

Any manager of public land with knowledge of Dr. Cohen’s methods (which this letter provides for a Federal District Court judge) would be subject to arrest should a fire break out and people living in the WUI are hurt and/or their homes are damaged. This is explained below.

**“E. Personal Liability For Violation of Environmental Laws.** In most cases, Federal employees are named as defendants in their official capacities because the actions in question are usually undertaken by virtue of their official authority. These cases generally proceed without risk of personal liability for the employee. In some cases, however, a Federal employee may be sued in his/her individual capacity for injuries or damages to persons or property. Individuals who violate environmental laws or who injure or damage the persons or property of others as a result of carelessness may be personally liable for the consequences. Environmental cases involving the USGS may be brought against the USGS itself, some smaller component, or individual employees. The individual employees may be named because the USGS can act only through its employees.

(1) Personal Liability for Injuries or Damages to Persons or Property. Where the actions of a Federal employee cause injuries or damage to the person or property of another, the injured party may bring an action to recover the cost of the damage.”

Source: USGS Manual – Chapter 3  
<http://www.usgs.gov/usgs-manual/handbook/hb/445-1-h/ch3.html>

This also applies to USFS employees.

**My Pending Media Contact**

Unless the final EA analyzes a Cohen alternative in detail I will write an letter to the editor briefly describing Dr. Cohen’s methods and will contain the link to the WEB site which explains Dr. Cohen’s methods ... and shows photos of burned homes adjacent to areas that had fuels reduction treatments implemented by a USFS contractor. The

striking thing about these photos is that they show unburned homes next to burned homes. The difference? The unburned homes had the fine fuels removed within 300 feet of the home per Dr. Cohen’s recommendations.

My letter will suggest that the public contact you Ranger Hojem and ask why a Cohen alternative was not analyzed in the Clear Creek project EA.

It won’t take long to compose and email a letter to the editor to the following newspapers:

*The Sanders County Ledger*  
[ledger@blackfoot.net](mailto:ledger@blackfoot.net)

*Polson Lake County Leader*  
[editor@leaderadvertiser.com](mailto:editor@leaderadvertiser.com)

*Missoulian*  
<http://missoulian.com/app/opedform/>

*Missoula Independent*  
[sbrowning@missoulanews.com](mailto:sbrowning@missoulanews.com)

Any USFS line-officer who trades off public safety so they can create industrial tree farm conditions and supply volume to their corporate masters should be indicted ..... and will be if they choose to keep Dr. Cohen’s fire risk reduction methods secret and something happens.

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**The Responsible Official Chooses to Circumvent the Will of the American Public to Provide Volume for the Natural Resource Extraction Corporations**

The following forest service publication describes what the public wants from their national forests:

**Survey results of the American public’s values, objectives, beliefs, and attitudes regarding forests and grasslands: A technical document supporting the 2000 USDA Forest Service RPA Assessment.** Gen. Tech. Rep. RMRS-GTR-95. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 111 p.

Link to Complete Report: [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr095.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr095.pdf)

**Comment:** The quote below from the USFS survey discussed above proves that the Proposed Action in the Clear Creek pre-decisional EA is the antithesis of what the American public want done to their precious national forest land:

“The public sees the restriction of mineral development and of timber harvest and grazing as being more important than the provision of natural resources to dependent communities (although this is still seen as somewhat important).” (Pg. 28)

**Comment:** Ranger Hojem, you are arrogant enough to accept your salary provided by the American public to caress your corporate masters and still consider yourself a public servant.

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Ranger Hojem, since you have read my comments and attachments you are now contemplating how to deny that the ecological harm I describe will occur in and downstream from the Clear Creek project area. Of course you will respond to my comments above with untrue, deceptive statements or meaningless responses (i.e. “so noted” or “thanks for the comment” etc.) to accomplish your goal and perhaps come closer to meeting your volume expectations. It’s sad that you call yourself a public servant and enjoy the salary provided by the public to take actions that benefit corporate America.

Judges can easily determine the difference between 1) a response to the public that is informative and relates to the issue at hand, and 2) a so-called response of a few meaningless words written by a Responsible Official who is frightened to really respond because the response would contradict the lies emphasizing the timber sale’s benefits to the forested ecosystem described in the pre-decisional EA.

Please notify this member of the public when the DN/FONSI and final EA are first posted online, the legal notice of decision is published in your newspaper of record and the 45-day appeal period begins.

Sincerely,



Dick Artley  
Grangeville, Idaho 83530

←8

**Response to Comment #8:** The cited document reports the results of a public survey that were used to help develop the Forest Service Strategic Plan (2000 Revision). The quotation provided here is under the heading of Economic Development which deals with commodity development and commercial uses of public land. On a scale of 1 to 5, with 1 being “not at all important” and 5 being “very important”, the survey results indicated “provide natural resources to dependent communities” as 3.60 and “restrict timber harvest and grazing” as 3.99, which are of relatively similar importance.

The survey also indicated there is wide support for the strategic goal of promoting ecosystem health and conservation using a collaborative approach to sustain the Nation’s forests, grasslands, and watersheds (page 2). The Clear Creek project is consistent with the strategic plan objectives supporting this goal: a) improve and protect watershed conditions; b) provide ecological conditions to sustain viable populations of native and desired nonnative species; c) increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species (see EA, pages 11-15; 48-117).

<p>Opposing Views Attachment 1: Respected Scientists Reveal the Certainty that Natural Resources in the Forest are Harmed (and some destroyed) by Timber Harvest Activities</p> <p>Opposing Views Attachment 3: Harvesting Trees to Reduce Fuels is not only Ineffective at Reducing the Risk of Fire Damage to Human Structures by Harms the Forest Ecosystem</p> <p>Opposing Views Attachment 4: Roads Damage the Proper Ecological Functioning of the Natural Resources in a Forest (Opposing views to road construction). The opposing views presented below are not always right or wrong. When responding to opposing views that the Responsible Official believes are “reasonable” please discuss them in the context of this project.</p> <p>Opposing Views Attachment 11: Any NEPA document that analyzes treatments to reduce the risk of fire damage to homes located in the WUI must analyze a Dr. Jack Cohen alternative in detail.</p>	<p>←9</p> <p>←10</p> <p>←11</p> <p>←12</p>	<p><b>Response to Comment #9:</b> The Forest Service has reviewed the cited literature in Attachment #1 and has provided a response in the table that follows this letter. The literature is comprised of both science-based articles and general commentary and opinions contained within newspaper and magazine articles, letters, Internet websites, and blogs. Many of the opposing views are in regard to clearcutting and timber harvest in old growth forests, neither of which is included in the Clear Creek project. Several other views suggest that timber harvest increases wildfire risk and severity. This situation largely depends on what type of harvest is used and whether the activity generated slash is treated. The Clear Creek project will use thinning from below followed by prescribed burning to modify fire behavior within treated areas. Please see Appendix E to the EA for a more thorough discussion of science basis for the vegetation treatments, their effectiveness, and contradictory views.</p> <p><b>Response to Comment #10:</b> The purpose and need for the Clear Creek project does not include reducing the risk of fire damage to human structures (see EA, pages 11-15). Fuels reduction in the Clear Creek project is within the context of restoring the structure and composition of the dry ponderosa pine and Douglas-fir forest types so that resulting stands are more resilient to insects, disease, drought, and wildfire. The fuel reduction aspect of the treatments is to increase the likelihood that future fires will remain on the ground and burn at a low to mixed severity within treated areas, which is more characteristic of historic conditions. Resulting stand structures and compositions will also reduce susceptibility to bark beetles. The project will use a combination of prescribed burning and mechanical treatments to achieve desired objectives. The Clear Creek Environmental Assessment (EA) and resource reports in the project file disclose the effectiveness and potential environmental effects of prescribed treatments. Fuel modeling indicates prescribed treatments will effectively modify fire behavior and reduce the intensity of a potential wildfire under normal summer conditions (EA, pages 50-53). The Forest Service has reviewed the cited literature in Attachment #3 and has provided a response in the table that follows this letter.</p> <p><b>Response to Comment #11:</b> Please see response to #4 above.</p> <p><b>Response to Comment #12:</b> Please see response to #7 above.</p>
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<b>Artley Attachment #1: Literature Review and Response</b>	
	The following were presented as opposing viewpoints to timber harvest
1	<p><b>Al-jabber, Jabber M. Habitat Fragmentation: Effects and Implications. Clearcuts and forest fragmentation, Willamette NF, Oregon. From: Cascadia Wildland Project, Spring 2003</b></p> <p>The commenter cites the above document that contains “pertinent color pictures showing logging damage, thus the article text is not shown here.”</p> <p><b>Forest Service Response:</b> The photograph in the referenced article shows a distant view of clearcuts in a forested landscape in Oregon. The Clear Creek project does not include clearcutting. The cited reference is primarily a general overview of fragmentation as it pertains to wildlife habitat.</p> <p>Fire history studies on the Lolo National Forest indicate that the forest experienced fires ranging from frequent, low severity underburns to large stand-replacing fires (Losensky 1997). These fires produced a variety of habitats and naturally fragmented the forest cover. Proposed timber harvest in approximately 6 percent (thinning on 5 percent and shelterwood cutting on 1 percent) of the Clear Creek watershed will not alter the landscape outside the range of conditions that would likely occur naturally over time in this area. Thus the project will have no measurable effect on fragmentation. Past regeneration harvest units within this drainage are 20 or more years old and have sufficient regrowth to provide adequate cover for wildlife species.</p>
2	<p><b>Anderson, P.G. 1996. “Sediment generation from forestry operations and associated effects on aquatic ecosystems” Proceedings of the Forest-Fish Conference: Land Management Practices Affecting Aquatic Ecosystems, May 1-4, 1996, Calgary, Alberta.</b></p> <p>“Timber harvest operations have been shown to have many effects on adjacent watercourses and on the aquatic ecosystems they support. This may occur from introductions or loss of woody debris, loss of riparian vegetation, accelerated stream bank and bed erosion, the alteration of natural channel form and process, and the reduction of stream habitat diversity. However, the existing literature indicates one of the most insidious effects of logging is the elevation of sediment loads and increased sedimentation within the drainage basin.</p> <p>Sediment generation from various forestry practices has been studied extensively in the past. Forestry practices which generate suspended sediments include all operations that disturb soil surfaces such as site preparations, clear-cutting, log skidding, yarding, slash burns, heavy equipment operation and road construction and maintenance.”</p> <p><b>Forest Service Response:</b> The Clear Creek project addresses sediment concerns through project design, Best Management Practices, and resource protection measures (EA, pages 37-41; Decision Notice Appendix D). The above cited article (p. 14) acknowledges that the delivery of sediment to streams resulting from ground disturbances can be largely avoided by proper design and planning, “allowing for the existence of both forestry and fish”.</p> <p>Vegetation management activities in the Clear Creek project will not measurably affect water quality because no activities will occur within stream buffers, which are designed to eliminate and/or reduce the potential for sediment delivery to water bodies (EA, page 63). Also because of applied stream buffers, vegetation treatment activities will have no effect on the amount of instream woody debris or riparian vegetation. In addition, vegetation treatments will have no measurable effect on water yield and thus will not affect stream stability (EA, page 64).</p> <p>Modeling indicates that road use, maintenance, storage and decommissioning activities near streams will result in a short-term increase in fine sediment delivery. However, over the long term these activities (maintenance, storage, and decommissioning) will reduce fine sediment delivery to area streams below existing levels (EA, page 62). Other actions in the Clear Creek project address existing watershed concerns regarding the established road system (e.g. culvert replacements and the realignment of Road #153 where it is immediately adjacent to Clear Creek).</p>
3	<p><b>Aber, John, Norman Christensen, Ivan Fernandez, Jerry Franklin, Lori Hiding, Malcom Hunter, James MacMahon, David Mlandenoff, John Pastor, David Perry, Ron Slangen, Helga van Miegroet. “Applying Ecological Principles to Management of the U.S. National Forests” Issues in Ecology Published by the Ecological Society of America. Number 6 Spring 2000.</b></p>

“Timber harvest will remove dead and dying material from the site and inhibit the recruitment of downed woody material as time progresses. Timber harvest and associated reduced structural complexity and reduced age and size class diversity are all known to reduce population abundance and diversity of ants and a number of birds. For instance, ants are documented to require downed woody material in a variety of sizes and in all stages of decomposition (*Torgersen and Bull*, 1995). This is an attribute that is negatively correlated with harvest of the dead and dying trees and positively correlated with natural succession, especially after disturbance. Ants and birds are known to predate on insect species which cause mortality to trees, serving as a potentially important population control in the case of epidemics or before they occur (*Campbell, Torgersen and Srivastava*, 1983). Structural and functional characteristics associated with unlogged forests are also important for canopy arthropods, which play an important role in regulating pest outbreaks (*Schowalter*, 1989).

Structural complexity, functional diversity, diversity of ecological process and diversity of structure in roadless areas are all expected to be less susceptible to the outbreak of pests and regulate insect activity in surrounding homogenized forests (*Schowalter and Means*, 1989; *Franklin, Perry, Schowalter, Harmon, McKee and Spies*, 1989).

A large body of scientific evidence also indicates that increased edge effect and increased sunlight into stands, resulting from reduced canopy cover associated with timber harvest, can directly promote the population abundance, productivity and persistence of insects which cause mortality to trees of (*Roland*, 1993; *Rothman and Roland*, 1998; *Kouki, McCullough and Marshall*, 1997; *Bellinger, Ravlin and McManus*, 1989).”

**Forest Service Response:** The above cited article does not include the quotes supplied by the commenter. The quotes appear to be from a document entitled “Can Logging Restore Our Forests – What Does the Science Say?” compiled by Mike Peterson of the Inland Empire Lands Council. The Forest Service response will address both the cited reference and the supplied quotes.

Cited Reference

The premise of the above cited article is that sustainable forest management of National Forests should be based on an understanding of how natural forest ecosystems work and that management prescriptions be consistent with that knowledge. The authors acknowledge that timber harvest is a valuable tool that can be used to selectively restore early successional habitat, reduce fuel loads, and contain pest and pathogen outbreaks in some forests. They identify what they believe to be major ecological considerations that should be incorporated in sound forest management policy:

1. Maintenance of soil quality and nutrient stocks that hold the key to current and future forest productivity may necessitate adjusting timber harvest rates and leaving more large woody debris on cutover areas.
2. Protection of water quality and yield and prevention of flooding and landslides call for greater attention to the negative effects of logging roads and the value of undisturbed buffer zones along streams and rivers.
3. Conservation of forest biodiversity will often require reducing forest fragmentation by clearcuts and roads, avoiding harvest in vulnerable areas such as old growth stands and riparian areas, and restoring natural structural complexity to cutover sites.
4. Planning at the landscape level is needed to address ecological concerns such as biodiversity, water flows, and forest fragmentation.
5. Land managers be alert for climate related stresses as well as damage from ground-level ozone, acid rain, and acidification of soils and watersheds.

The Clear Creek project is an integrated resource project that is consistent with these principles: 1) The project will maintain soil productivity and comply with Region 1 soil quality standards (EA, page 76). Several resource protection measures (EA, pages 37-38; DN Appendix D) are identified to protect soil resources including a provision to leave coarse woody debris at levels outlined in the Lolo National Forest Coarse Woody Material Guide. 2) Water quality and yield will be protected (see response to #2 above). 3) The Clear Creek project will not conduct timber harvest within riparian areas or old growth stands. No clearcutting will occur. The project will reduce the total miles of existing road within the project area through decommissioning. 4) During the development of this project the entire Clear Creek watershed was assessed for all resource needs. 5) The vegetation treatments will restore vegetative conditions that are more resilient in response to natural disturbances and responsive to fundamental environmental shifts so ecological processes will sustain composition, structure, species, and genetic diversity in the future.

Quotations and associated cited literature

**Torgersen and Bull (1995):** Research in northeastern Oregon that studied the relationship between downed logs, ants, and pileated woodpeckers. Pileated woodpeckers feed on ants, preferring a specific species that tends to inhabit large diameter (20-47") downed logs in the middle log-decomposition class. The authors also found within these same types of logs, ant species that are documented predators of the western spruce budworm. The researchers suggest land management practices that result in inadequate amounts and kinds of down wood could affect pileated woodpecker populations and the beneficial role that foliage-foraging ants have in maintaining forest health. They recommend land managers consider these complex interconnecting life systems when developing guidelines that prescribe size, species, and amounts of large woody debris in order to conserve functional processes that foster sustainable forest ecosystems.

**Campbell, Torgersen, and Srivastava (1983):** Study in north central Washington that indicates predation by birds and ants exerted a major influence on the dynamics of sparse populations of western spruce budworm.

**Schowalter (1989):** Study in western Oregon that compared the insect communities in old growth and regenerating forest canopies. Findings indicate that: a) species diversity and functional diversity were much higher in canopies of old growth trees compared to those of young trees; and b) herbivory in mature, structurally complex ecosystems was insignificant compared with natural or planted monocultures. The study suggests that young forests are naturally susceptible to elevated activity of sap-sucking insects, a situation perhaps exacerbated by planting of even-aged monocultures over extensive areas. The study also suggests that plant diversity in young stands could mitigate pest activity.

**Forest Service Response to commenter's paragraph 1:** The Clear Creek project will not salvage dead and dying trees. Resource Protection Measure #25 (EA pages 39-40) states that snags will remain within treatment areas. Snags needing to be cut for safety will be left on the ground. In addition woody debris will be left in units in accordance with the Lolo National Forest Dead and Down Habitat Component Guidelines and the Lolo National Forest Coarse Woody Material Guide. Harvest prescriptions will leave the largest, most fire-resistant trees within treatment units.

**Schowalter and Means (1989):** Authors say that current forest management concerns in the Pacific Northwest include root beetles, woolly aphids, gypsy moth, black-stain root disease, and Port Orford cedar root rot all promoted by road construction and/or young monocultures. The article says that converting landscapes dominated by old growth forests to landscapes dominated by extensively roaded young monocultures removes predators and physical barriers to dispersing pests, thereby increasing the likelihood of regionwide pest outbreaks.

**Forest Service Response to commenter's paragraph 2:** Timber harvest will occur on approximately 6 percent of the Clear Creek watershed within an area that contains an established road system and where timber harvest has occurred over time since the 1950s. No harvest will occur within old growth stands. Shelterwood cutting, which would result in tree regeneration, will occur on approximately 248 acres (or about 1.4 percent of the watershed) where root disease is causing tree mortality. Thus, the project will maintain the structural and species diversity across the landscape and not result in a "homogenized" forest.

**Kouiki, McCullough, and Marshall (1997):** Study in northern Michigan that evaluated the association between jack pine budworm defoliation and the spatial distribution of stand characteristics. The data suggests that the presence of young adjacent stands increased the level of defoliation in focal stands. Although the cause is unknown, the authors hypothesize that these forest "edges" receive more sunlight, which increases the production of pollen cones on which budworm larvae feed. Authors caution against generalizing their results beyond the area studied and stress that further research is needed before management recommendations are developed.

**Rothman and Roland (1998):** Study conducted in mixed stands of aspen and balsam poplar in Alberta, Canada that examined the relationships between tent caterpillar colonies and forest fragmentation at several spatial scales. Results suggest that forest fragmentation will enhance growth of tent caterpillar populations and could increase the duration of outbreaks or reduce the rate of population declines. Authors caution against generalizing study results beyond the area studied. They indicate that their study is most applicable to tent caterpillar colonies from high density and declining populations, and in which baculoviruses (a group of naturally occurring insect pathogens) is present early in larval development.

	<p><b>Roland (1992):</b> The author examined historical data (1950-1984) on the duration of tent caterpillar outbreaks in northern Ontario, Canada. Results suggest a pattern of increased duration of forest tent caterpillar outbreak with an increase in forest fragmentation. The author hypothesizes several mechanisms for this: forest fragmentation may limit the dispersal of natural enemies of the caterpillar; tent caterpillars prefer to lay eggs on the sunny sides of trees; microclimate tends to be warmer at the edge of forests than the interior.</p> <p><b>Bellinger, Ravlin, and McManus (1989):</b> Study in Virginia found more gypsy moth egg masses on the edge side of edge trees than on the edge side of interior trees and on the interior side of edge trees, but found no difference in the number on the interior side between edge trees and interior trees. This study only addresses the implication of distribution of gypsy moth egg masses on sampling - sampling edges overestimates populations and sampling away from the edges underestimate populations.</p> <p><b>Forest Service Response to commenter’s paragraph 3:</b> The Lolo National Forest is not affected by the insects (jack pine budworm, tent caterpillars, or gypsy moths) on which the cited references are focused. The authors of these articles caution against generalizing their results beyond the areas studied. Thus, the cited literature is not relevant to the Clear Creek project. Contrary to the quotation provided by the commenter, high stand densities increase the risk of bark-beetle induced tree mortality (Hagle et al. 2000). Bark beetles are the primary insect pests found on the Lolo National Forest that cause significant tree mortality.</p>
4	<p><b>Barry, Glen, Ph.D. “Commercial Logging Caused Wildfires” Published by the <i>Portland Independent Media Center</i>, August 2002.</b></p> <p>“The biggest ecological con job in years is being waged by the U.S. Republican party and their timber industry cronies. They are blaming the recent Western wildfires on environmentalists, and assuring the public that commercial logging will reduce the risk of catastrophic wildfires.”</p> <p><b>Forest Service Response:</b> The cited article is 10-year old commentary opposed to the then Bush administration’s support for fuels reduction under the National Fire Plan.</p> <p>One of the purposes of the Clear Creek project is to break up the tree canopy to increase the chance of survival of long-lived trees in the event of a widespread wildfire (EA, pages 11-13). The Clear Creek EA displays that harvest and prescribed burn treatments will effectively modify fire behavior within treated areas and reduce the intensity of a potential wildfire under normal summer conditions (EA, pages 50-53). Harvest treatments will retain the largest, most fire-resistant trees. Following harvest activities, the slash will be treated to reduce fire hazard.</p>
5	<p><b>Barry, John Byrne. “Stop the Logging, Start the Restoration” from <i>The Planet</i> newsletter June 1999, Volume 6, Number 5</b></p> <p>“According to a 1998 poll by a firm that has worked for several Republican House members and two presidents, 69 percent of Americans oppose commercial logging on federally owned land. The Forests Service’s own poll showed that 59 percent of Americans who expressed an opinion oppose timber sales and other commodity production in national forests.”</p> <p>“Many Americans are surprised to learn that logging is even allowed on public lands. Alas, it has been since the Organic Act of 1897 first authorized logging in America’s new forest reserves. That legislation called for watershed protection and a steady supply of timber - what the Forest Service calls ‘multiple use.’ ”</p> <p>“But the agency has been unable to balance those goals. More often than not, the integrity of the forest ecosystem has been sacrificed to maximize timber and other commodities. And at taxpayer expense, notes Bernie Zaleha, chair of the End Commercial Logging on Federal Lands (ECL) campaign. The Forest Service lost \$2 billion on its logging program from 1992 to 1997, according to the General Accounting Office. It spends more on building roads and preparing sales than it gets back in timber receipts.”</p> <p><b>Forest Service Response:</b> This is 13-year old opinion commentary published in a 1999 Sierra Club newsletter, advocating an end to commercial timber harvest on Federal lands. The Sierra Club supported the National Forest Protection and Restoration Act (H.R. 1396) that would eliminate commercial logging on Federal public lands. This bill did not become law.</p>

	<p>Some opinions apparently have changed since 1999. In 2007, as a member of the Montana Forest Restoration Committee, the Montana Chapter of the Sierra Club helped develop the 13 Restoration Principles that include the use of timber harvest to meet forest restoration objectives (<a href="http://www.montanarestoration.org">www.montanarestoration.org</a>). The Clear Creek project is consistent with these principles (EA, Appendix E).</p> <p>The Clear Creek project is an integrated resource project proposed to improve forest and watershed health, improve big game winter range, and enhance recreation facilities. Timber harvest will occur on approximately 1151 acres to achieve forest health and wildlife habitat objectives. The project was developed collaboratively with interested members of the public consisting of local residents, County commissioners, and representatives of environmental organizations and the timber industry (EA, pages 7 and 16).</p>
6	<p><b>Cushman, John H. Jr. “Audit Faults Forest Service on Logging Damage in U.S. Forests” <i>New York Times</i>, February 5, 1999</b></p> <p>“Federal auditors have found that the Forest Service frequently fails to assess, prevent or correct environmental damage from logging on the national forests.</p> <p>After inspecting 12 timber projects in the field from 1995 to 1998, the Agriculture Department’s inspector general found that all were deficient and that ‘immediate corrective action is needed.’</p> <p>A new report on the audits found that the environmental studies required before logging was approved were poorly done, the rules to protect streams and wildlife habitat from undue damage during logging were not followed, and the steps planned to repair some of the harm after logging were not carried out.</p> <p>The inspector general, Roger C. Viadero, reported on Jan. 15 to Mike Dombeck, chief of the Forest Service, that the review had found “numerous serious deficiencies.” Agency officials generally agreed with the report’s conclusions and recommendations.”</p> <p><b>Forest Service Response:</b> The referenced audit report was published nearly 14 years ago on reviews that were conducted 1-4 years prior to that in Wisconsin, California, Georgia, Virginia, West Virginia, Mississippi, and Minnesota. The NEPA documents reviewed were completed from 1992 to 1996 (16-20 years ago). The cited audit is not specific or relevant to Clear Creek Environmental Assessment (EA). The resource reports in the Project File demonstrate that required assessments were completed prior to the publication of the EA.</p>
7	<p><b>Dombeck, Mike Ph.D. “Through the Woods” <i>The News Hour with Jim Lehrer</i>. 19 June 1998.</b></p> <p>“The timber harvest shouldn’t be dominant. It should be on an equal plane with recreation concerns, with wildlife concerns, hunting, fishing, protecting our cultural heritage. That’s what the American public is asking us to do.”</p> <p><b>Forest Service Response:</b> This quote from former Forest Service Chief Mike Dombeck is taken out of context. In the referenced transcripts from the News Hour program, the panel of participants discussed the potential impacts that an 18-month moratorium on road building in Inventoried Roadless areas would have on the timber industry. Interviewed congressional members and industry representatives expressed concern that the moratorium was political and would lead to locking up the National Forests from timber harvest. Chief Dombeck’s statement points out that timber harvest needs to be considered along with the many other uses on the National Forest. The Clear Creek project is an integrated resource project that addresses the needs of wildlife, aquatics, vegetation, and recreation within the Clear Creek watershed.</p>
8	<p><b>Dombeck, Mike Ph.D. a message on “Conservation Leadership” sent to all USFS employees on July 1, 1998</b></p> <p>“I recently read a letter from a line officer who chided local managers for being behind schedule relative to meeting the region’s ‘timber targets.’ My expectation is that line officers will demand similar accountability for meeting watershed restoration, fish and wildlife habitat, riparian, recreation, cultural resource, and wilderness management goals.”</p> <p>“We need to do a better job talking about, and managing for, the values that are so important to so many people. Values such as wilderness and roadless areas, clean water, protection of rare species, old growth forests, naturalness -- these are the reasons most Americans cherish their public lands.”</p>

	<p>"Fifty years ago, Aldo Leopold wrote his seminal work, <i>A Sand County Almanac</i>. In it, Leopold spoke of his personal land ethic and the need for land managers to extend their own ecological conscience to resource decisions. The Forest Service natural resource agenda is an expression of our agency's land ethic. If we are to redeem our role as conservation leaders, it is not enough to be loyal to the Forest Service organization. First and foremost, we must be loyal to our land ethic. In fifty years, we will not be remembered for the resources we developed; we will be thanked for those we maintained and restored for future generations."</p> <p><b>Forest Service Response:</b> This is a message from then-Chief Mike Dombeck sharing his view on what makes a "conservation leader" in the context of his natural resource agenda.</p> <p>By Federal law (NFMA), forest plans provide the framework for the management of National Forest System lands. The Clear Creek project is an integrated resource project that addresses the needs of vegetation, wildlife, aquatics and recreation within the Clear Creek drainage (EA, page 11-15; DN page 6). The project will not affect wilderness values and will meet all Forest Plan standards and guidelines including those for soil, water, fish, wildlife, heritage resources, and recreation.</p>
9	<p><b>Ehrlich, Anne Ph.D., David Foster Ph.D. and Peter Raven Ph.D. 2002. "Call to End Logging Based on Conservation Biology." Native Forest Network.</b></p> <p>"For much of the past century the Forest Service, entrusted as the institutional steward of our National Forests, focused its management on an industrial-scale logging program. The result of the massive logging and road construction program was to damage watersheds, destroy wildlife habitat and imperil plant and animal species."</p> <p>"The continued logging of our National Forests also wastes American tax dollars and diminishes the possibilities of future economic benefits. The Forest Service lost \$2 billion dollars on the commercial logging program between 1992-1997. Annually, timber produces roughly \$4 billion while recreation, fish and wildlife, clean water, and unroaded areas provide a combined total of \$224 billion to the American economy. Forests purify our drinking water - 60 million Americans get their drinking water from National Forests. When the dramatic values of ecological goods and services are taken into account, it is clear that protecting National Forests creates more economic benefits than continued logging."</p> <p><b>Forest Service Response:</b> The citation is a 10-year old letter written in 2002 to then President Bush calling for an end to commercial logging on the National Forests and encouraging the development of a policy to restore forests.</p> <p>The Forest Service has since established a policy for using ecological restoration to manage National Forest System lands in a sustainable manner (Forest Service Manual 2020). Ecological restoration focuses on establishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future conditions. Consistent with this policy, the purposes of the Clear Creek project are to restore forest stand resilience, enhance big game winter range habitat, and improve water quality, stream stability, and fish passage (EA, pages 11-15). Timber harvest is one of the tools that will be used to achieve the vegetation objectives. The EA and supporting documentation in the Project File demonstrates that the project will improve tree health and vigor (EA, page 51); reduce the likelihood that treated areas will support high severity fire (EA, pages 50-53); improve water quality, stream function, and aquatic habitat over the long-term (EA, pages 61-75); will not affect the viability of sensitive plant species (EA, pages 57-60); will improve forage conditions on big game winter range (EA, page 110); and not adversely affect wildlife species or habitat (EA, pages 79-110).</p>
10	<p><b>"Bush Fire Policy: Clearing Forests So They Do Not Burn" Forest Conservation News Today, August 27, 2002</b></p> <p>"The Bush administration has announced plans to greatly increase logging on federal lands in order to reduce the risk of wildfires. The Forest Service is using the fear of wildfires to allow logging companies to remove medium-and large-diameter trees that they can sell, rather than just the small trees and brush that can make fires more severe. There is little evidence to show that such logging will prevent catastrophic fires; on the contrary, logging roads and industrial logging cause wildfires. Bush is a well known supporter of the timber industry and has accepted huge sums of money from wealthy timber company leaders. He is promoting misinformation about forest fires in order to benefit timber industry campaign contributors."</p>

	<p><b>Forest Service Response:</b> The cited article is opinion commentary written 2002 criticizing then President Bush and his administration's support for fuels reduction (Healthy Forests Initiative).</p> <p>Reducing the risk of wildfire is not the purpose of the Clear Creek project. However, one of the vegetation objectives is to increase the likelihood that treated areas will support low and mixed severity wildfires and decrease the likelihood that they will support high-severity fires (EA, pages 52-54). To achieve this objective, the project proposes to reduce tree densities on these warm, dry forest types. Proposed vegetation treatments will retain the larger, fire-tolerant trees as well as fire-tolerant tree species. The average tree diameter will increase within treated areas due to the removal of small trees (EA, page 51). Fuel modeling indicates that proposed treatments will effectively modify fire behavior and reduce the intensity of a potential wildfire under normal summer conditions (EA, page 52).</p>
11	<p><b>Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. "Simplified Forest Management to Achieve Watershed and Forest Health: A Critique."</b></p> <p>"The proposition that forest values are protected with more, rather than less logging, and that forest reserves are not only unnecessary, but undesirable, has great appeal to many with a vested interest in maximizing timber harvest. These ideas are particularly attractive to institutions and individuals whose incomes depend upon a forest land base. On the other hand, approaches that involve reserving of a portion of the land base, or harvest practices that leave commercially valuable trees uncut to achieve ecological goals, are often considered much less desirable as they reduce traditional sources of timber income. (page 2)"</p> <p><b>Forest Service Response:</b> The National Wildlife Federation (NWF) commissioned this article, which is a critique of forest management plans and policies that call for active management of essentially the entire forest area, and which specifically reject the consideration of biological reserves and non-traditional harvest techniques, such as structural retention. Much of the focus of this article is on 'intensive' silvicultural management of old growth forests in the Pacific Northwest.</p> <p>The Clear Creek project does not propose what the authors are calling Simplified Structure-Based Management. The Clear Creek project proposes active management using of a variety of treatments and treatment methods on about 11 percent of the Clear Creek watershed (with timber harvest proposed on about six percent) to improve forest stand resilience and big game winter range conditions in dry forest types. This would leave the remaining 89 percent of the watershed unaffected by this project. Timber harvest is proposed within an area that has been actively managed in the past. The project will not affect old growth stands and individual large, older trees will be retained within treatment areas. Consistent with the recommendations in the article, the Clear Creek project will retain coarse woody debris, snags, and other forest structure within all vegetation treatment units</p>
12	<p><b>Franklin, Jerry F. Ph.D. and James K. Agee Ph.D. 2007. "Forging a Science-Based National Forest Fire Policy." Issues in Science and Technology. A National Wildlife Federation publication sponsored by the Bullitt Foundation.</b></p> <p>"Consequently, we specifically criticize the "simplified structure-based management" approaches derived from simple structural models and traditional silvicultural systems such as clearcutting. In our view, the assumptions underpinning simplified structure-based management (SSBM) are not supported by the published scientific literature on structural development of natural forests, disturbance ecology, landscape ecology and conservation biology, or by the relationships between ecosystem structures and processes. In this report, we review scientific findings associated with each of these areas with particular attention to the over-simplified structural models associated with SSBM and the importance and viability of forest reserves to achieve various ecological goals. (page 2)</p> <p>"We do not believe, however, that scientific literature or forestry experience supports the notions that intensively managed forests can duplicate the role of natural forests, or that sufficient knowledge and ability exist to create even an approximation of a natural old-growth forest stand." (page 3)</p> <p><b>Forest Service Response:</b> The above quotes provided by the commenter are not contained within the reference provided. These quotes are contained within the article cited in #11 above. Please see the Forest Service's response to #11. The Clear Creek project does not include clearcutting or timber harvest in old growth stands.</p>

	<p>The article cited here in #12, “Forging a Science-Based National Forest Fire Policy”, provides considerations for the development of a national forest fire policy, which is irrelevant to the Clear Creek project.</p>
<p>13</p>	<p><b>Giuliano, Jackie Alan, Ph.D. “Fire Suppression Bush Style: Cut Down the Trees!” Environmental News Service, 2002.</b></p> <p>“But the majority of the protesters were angry about Bush’s plans to implement rules that would thin our national forests to reduce fire risk. Cascadia Forest Alliance volunteer Carrie Taylor said Bush’s plan to log mature and old forests “will only increase fire risks while providing taxpayer subsidized logs to the timber industry.”</p> <p>“According to the Cascadia Forest Alliance, under the Bush proposal, ‘environmental laws and citizen involvement will be undermined or suspended so that federal land management agencies can increase logging and roadbuilding on public lands, one of the timber industry’s highest priorities.’”</p> <p><b>Forest Service Response:</b> This article is opinion commentary written over 10 years ago in opposition to the former Bush administration’s Healthy Forests Initiative and is not relevant to the Clear Creek project. The Clear Creek project is not proposed under the authority of the Healthy Forests Restoration Act, which stemmed from the Healthy Forests Initiative. The project will retain the larger, fire-resistant trees. No activities will occur within old growth stands. The Clear Creek project is consistent with environmental laws (Decision Notice, pages 32-38) and public involvement has been ongoing since the project’s initiation of this project. The project was developed collaboratively with the public. A 30-day public comment period was provided on the initial proposal and a 60-day public comment period was provided on the Clear Creek Environmental Assessment.</p>
<p>14</p>	<p><b>Government Accounting Office “Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats” GAO/RCED-99-65</b></p> <p>“Most of the trees that need to be removed to reduce accumulated fuels are small in diameter and have little or no commercial value.”</p> <p>“Mechanically removing fuels (through commercial timber harvesting and other means) can also have adverse effects on wildlife habitat and water quality in many areas. Officials told GAO that, because of these effects, a large-scale expansion of commercial timber harvesting alone for removing materials would not be feasible. However, because the Forest Service relies on the timber program for funding many of its activities, including reducing fuels, it has often used this program to address the wildfire problem. The difficulty with such an approach, however, is that the lands with commercially valuable timber are often not those with the greatest wildfire hazards.”</p> <p><b>Forest Service Response:</b> The literature citation is a report to Congress from the Government Accounting Office that recommends the development of a cohesive strategy for reducing and maintaining accumulated fuels on national forests of the interior West at acceptable levels. The quotes provided by the commenter are describing what the GAO identifies as some of the barriers to the effective action of addressing catastrophic wildfire (page 7).</p> <p>This literature reference is not relevant to the Clear Creek project because it recommends a National policy for addressing wildfire and fuel conditions across the interior West, which is not within the scope of this project. The Clear Creek project proposes various site-specific vegetation treatments including prescribed burning, timber harvest, and non-commercial thinning to improve forest stand resilience and big game winter range habitat.</p>
<p>15</p>	<p><b>Gorte, Ross W. Ph.D. “Forest Service Timber Sale Practices and Procedures: Analysis of Alternative Systems.” A Congressional Research Service (CRS) report, October 30, 1995.</b></p> <p>“The recent concern over the poor health of western pine ecosystems has been attributed at least partly to inappropriate silvicultural practices, both before and since the national forests were established. (4) Because of the timber industry’s needs, logging in mixed conifer stands has emphasized cutting the large pines and leaving the true firs and Douglas-fir to dominate the remaining stands. (5) However, true firs and Douglas-fir are more susceptible to the damage (including insect and disease attacks as well as direct damage) that has occurred during the decade-long drought in the interior West, and thus may contribute to the risk of catastrophic wildfires. Salvage sales are one tool that can be used to improve forest health, (6) but critics object to granting the agency the discretion to use timber sales to correct problems partially created by past timber sales.”</p>

	<p>“A more general concern in some quarters is over Forest Service "bias" toward timber outputs, at the expense of ecosystem conditions and other resource values. While timber harvests are important, other important values are not measured, and managers are not rewarded for achieving these other values. (7) Some have attributed this "bias" to inappropriate incentives, particularly related to the agency's numerous trust funds and special accounts. (8) The Forest Service has several trust funds and special accounts that are either funded by timber revenues or provide funds for timber management (or both). (9)”</p> <p>“One trust fund often cited by critics is the Knutson-Vandenberg (K-V) Fund. This account receives an unlimited portion of timber sale receipts, to be used for reforestation, timber stand improvements, and other resource mitigation and enhancement activities in timber sale areas. Forest Service managers can, therefore, fund their programs from timber sales; in the words of one critic, wildlife managers have an incentive to support timber sales that damage wildlife habitat, because they can use the revenues to mitigate that damage and to keep themselves and their staffs employed. (10)”</p> <p><b>Forest Service Response:</b> This 19-year old cited literature reference provides an overview of the Forest Service timber sale system (i.e. timber sale contract process) and examines possible changes to the system. The quotes provided by the commenter are listed within the article as concerns that some “interest groups and members of Congress” have expressed about the Forest Service timber sale program in the 15 or more years preceding the publication of the article in 1995.</p> <p>The Clear Creek project is an integrated resource project that addresses the needs of vegetation, wildlife, aquatics, and recreation. The purpose of the Clear Creek project vegetation treatments is to improve forest stand resilience and big game winter range conditions. Any timber outputs would be a by-product of meeting the stated vegetation objectives (EA, page 29). The project will retain the large, fire-resistant trees, which include ponderosa pine. K-V funds must first be used for essential reforestation. Only timber sales that sell above Forest Service base rates generate K-V funds for non-essential projects, like wildlife habitat improvement. Therefore, the availability of K-V funding for work other than reforestation is never assured.</p>
16	<p><b>Hanson, Chad Ph.D., “Commercial Logging Doesn't Prevent Catastrophic Fires, It Causes Them.” Published in the <i>New York Times</i>, May 19, 2000</b></p> <p>“In April 1999, the General Accounting Office issued a report that raised serious questions about the use of timber sales as a tool of fire management. It noted that "most of the trees that need to be removed to reduce accumulated fuels are small in diameter" -- the very trees that have 'little or no commercial value.' “</p> <p>“As it offers timber for sale to loggers, the Forest Service tends to ‘focus on areas with high-value commercial timber rather than on areas with high fire hazards,’ the report said. Its sales include ‘more large, commercially valuable trees’ than are necessary to reduce the so-called accumulated fuels (in other words, the trees that are most likely to burn in a forest fire).”</p> <p>“The truth is that timber sales are causing catastrophic wildfires on national forests, not alleviating them. The Sierra Nevada Ecosystem Project Report, issued in 1996 by the federal government, found that ‘timber harvest, through its effects on forest structure, local microclimate and fuel accumulation, has increased fire severity more than any other recent human activity.’ The reason goes back to the same conflict that the G.A.O. found: loggers want the big trees, not the little ones that act as fuel in forest fires.”</p> <p>“After a ‘thinning’ timber sale, a forest has far fewer of the large trees, which are naturally fire-resistant because of their thick bark; indeed, many of these trees are centuries old and have already survived many fires. Without them, there is less shade. The forest is drier and hotter, making the remaining, smaller trees more susceptible to burning. After logging, forests also have accumulations of flammable debris known as "slash piles" -- unsalable branches and limbs left by logging crews.”</p> <p><b>Forest Service Response:</b> The cited reference is opinion commentary written in 2000 by a national director of the Sierra Club that opposes using commercial timber harvest as a tool to reduce forest fuels. The author expresses support for ending timber sales on federal lands through Congressional legislation.</p> <p>The Clear Creek project will use a combination of prescribed burning and mechanical treatments on approximately 1830 acres to lower stand densities and favor fire and disease-resistant tree species, which will reduce forest fuels, improve forest health, and reduce risk of insect predation (EA, pages 50-51). The larger fire-tolerant trees, as well as fire-tolerant trees species (e.g. western larch and ponderosa pine) will be retained. The average tree diameter will increase within treated</p>

	<p>areas as well as the proportion of ponderosa pine and western larch trees (EA, page 51). Natural and activity generated slash will be treated through the use of prescribed fire (EA, pages 29-30). Fuel modeling indicates that proposed treatments will effectively modify fire behavior and reduce the intensity of a potential wildfire under normal summer conditions (EA, page 52).</p>
17	<p><b>Hanson, Chad, Ph.D. “Logging for Dollars in National Forests” Special to <i>The Sacramento Bee</i> - November 14, 2001</b></p> <p>"The Forest Service keeps the vast majority of timber sale revenues, which gives it a perverse incentive to do more cutting. It has developed a huge bureaucracy around the selling of timber from national forest land."</p> <p><b>Forest Service Response:</b> The article is opinion commentary written in 2001 by a national director of the Sierra Club opposing a post-fire salvage project in California. The author says that the project will log old growth forests on thousands of acres. At the end of the article, the author expresses support for ending timber sales on federal lands.</p> <p>This article is not relevant to the Clear Creek project. The Clear Creek project is not post-fire salvage project. No activities will occur within old growth stands. In response to the quote singled out by the commenter, the revenue from traditional timber sale contracts is sent to the general Treasury and not to the Forest Service.</p>
18	<p><b>Hanson, Chad Ph.D., “Logging Industry Misleads on Climate and Forest Fires.” Guest Commentary in <i>New West</i>, July 11, 2008</b></p> <p>“Recent editorials by timber industry spokespersons are a wildly misleading attempt to promote increased logging of western U.S. forests under the guise of reducing wildland fires ...”</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary written in response to previous editorials. The author criticizes unnamed timber industry spokespersons for making what he claims are false statements regarding wildland fires and climate change.</p> <p>The quote supplied by the commenter is opinion, is unrelated to the Clear Creek project, and does not provide anything substantive to respond to.</p>
19	<p><b>Harvey, A. E., M. J. Larsen, and M. F. Jurgensen “Distribution of Ectomycorrhizae in a Mature Douglas-fir/larch Forest Soil in Western Montana”</b></p> <p>"Logging reduces the organic parent material (duff and woody residues) available for soil-formation processes."</p> <p><b>Forest Service Response:</b> The cited reference actually says, “Increased tree utilization potentially reduces the organic parent materials (litter and woody residues) available for soil-formation processes.” The authors conclude, “the parent materials (leaves, litter, and woody residues) for soil organic reserves may require management during timber harvesting and prescribed burning to prevent a subsequent loss in the capacity of soils of this type (limestone base) to support ectomycorrhizal associations in mature Douglas-fir/larch forests.”</p> <p>Resource protection measures in the Clear Creek Environmental Assessment include leaving coarse woody debris within treatment areas in accordance with the guidelines listed in the Lolo National Forest Coarse Woody Material Guide: retaining slash through one winter after cutting to allow for initial decomposition and nutrient leaching; stockpiling top soil during temporary road and excavated skid trail construction to be redistributed over the disturbed sites following project completion; and ensuring that bare mineral soil will not be exposed on more than 15% of areas of prescribed burning (EA, pages 37-38).</p>
20	<p><b>Houston, Alan Ph.D., "Why Forestry is in Trouble with the Public." <i>Evergreen</i> magazine, October 1997.</b></p> <p>"For too long, we foresters took the public for granted, assuming unwavering support for those who grow the nation's wood fiber. Few noticed when the public's mood changed, and those who did were often ridiculed by disbelieving colleagues. Now we come to a day of reckoning: the public believes forests are too important to be entrusted to foresters. To restore lost confidence, foresters must first come out of hiding. We have a lot of explaining to do because, where forests are concerned, the public will no longer support what it cannot see and understand. Regaining the public's trust will take time. We must be prepared to answer hard questions about what we are doing and how our actions are impacting the environment. We must also help the public think through its forest</p>

	<p>management options. When we lay out these options, we must speak of much more than trees. Only then will our critics know we love forests as much as they do."</p> <p><b>Forest Service Response:</b> The cited opinion is listed by itself as a "quotable quote" in Evergreen magazine and is not tied to a specific reference. The quote is an opinion that provides nothing substantive to respond to. The Clear Creek project was developed collaboratively with the public and provided an opportunity to discuss site-specifics with those who participated. The collaborative process served as a positive forum to share information and learn from one another.</p>
21	<p><b>H. R. 1494 text. April 4, 2001</b></p> <p>"SEC. 3. FINDINGS. Congress finds the following: Commercial logging has many indirect costs which are very significant, but not easily measured, such as flooding damage and relief of flooding damage through Federal funds, damage to the salmon fishing industry; and harm to the recreation and tourism industries."</p> <p><b>Forest Service Response:</b> H.R. 1494 was a bill submitted to Congress to prohibit commercial logging on federal lands and restore native biodiversity and natural ecological complexes and processes. This bill did not become law.</p> <p>The Clear Creek project will not measurably affect water yields (EA, page 64), thus will not increase risk of flooding. Salmon are not native to this area and thus the project won't affect the salmon fishing industry. Modeling indicates there will be a short-term increase in sediment from instream project activities and road-related work that will occur near streams. However following project activities, sediment will be reduced below existing levels in the long-term due to road decommissioning, storage, and maintenance and instream stabilization work (EA, page 62). In the long-term, the project will result in an improving trend in fisheries habitat through the reduction of fine sediment from forest roads below existing levels, the addition of instream woody debris, the stabilization of streambanks in priority areas, and removal of fish passage barriers (EA, page 68).</p> <p>Recreation in the Clear Creek area will not be affected by proposed harvest activities. Harvest activities will occur within areas that have been managed in the past. Roads currently open to the public and the Clear Creek trail will remain open during and following project activities.</p>
22	<p><b>Hudak, Mike Ph.D. "From Prairie Dogs to Oysters: How Biodiversity Sustains Us" from his book review of <i>The Work of Nature: How the Diversity of Life Sustains Us</i> by Yvonne Baskin, 1997. Newsletter of Earth Day Southern Tier, February/March 1999, p. 2</b></p> <p>"Human tampering with nature has not been without costs. Human manipulation of existing ecosystems has also sometimes had unfortunate consequences."</p> <p><b>Forest Service Response:</b> The citation is a review of the book "The Work of Nature: How the Diversity of Life Sustains Us" by Yvonne Baskin. It is true that human beings have manipulated the environment since the beginning of their existence, sometimes with unintended consequences. The Clear Creek project does not propose any of the actions identified in the book review article which included draining of wetlands, introduction of non-native species, clearcutting, or establishing monocultures.</p>
23	<p><b>Huff, Mark H. Ph.D.; Ottmar, Roger D.; Alvarado, Ernesto Ph.D. Vihnanek, Robert E.; Lehmkuhl, John F.; Hessburg, Paul F. Ph.D. Everett, Richard L. Ph.D. 1995. "Historical and current forest landscapes in eastern Oregon and Washington. Part II: Linking vegetation characteristics to potential fire behavior and related smoke production" Gen. Tech. Rep. PNW-GTR-355. USDA Forest Service, Pacific Northwest Research Station.</b></p> <p>"In general, rate of spread and flame length were positively correlated with the proportion of area logged (hereafter, area logged) for the sample watersheds. Correlation coefficients of area logged with rate of spread were &gt; 0.57 for five of the six river basins (table 5). Rate of spread for the Pend Oreille and Wenatchee River basins was strongly associated (r=0.89) with area logged. Correlation of area logged with flame length were &gt; 0.42 for four of six river basins (table 5). The Deschutes and Methow River basins showed the strongest relations. All harvest techniques were associated with increasing rate of spread and flame length, but strength of the associations differed greatly among river basins and harvesting methods." (pg.9)</p> <p>"As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. The</p>

	<p>potential rate of spread and intensity of fires associated with recently cut logging residues is high, especially the first year or two as the material decays. High fire-behavior hazards associated with the residues can extend, however, for many years depending on the tree. Even though these hazards diminish, their influence on fire behavior can linger for up to 30 years in the dry forest ecosystems of eastern Washington and Oregon.”</p> <p><b>Forest Service Response:</b> The paper referenced (Huff et al. 1995) above was an attempt to compare the potential fire behavior and smoke production of historical and current time periods for forty-nine 5,100 to 13,500 hectare watersheds. It was a landscape-level modeling exercise based upon vegetation type and timber harvest type classification from aerial photo interpretation of historic (1938-1959) and current (1985-1992) aerial photos. The authors used fuel behavior photo series to assign fuel loading by vegetation type for non-harvested areas and by harvest-type in harvested areas. Due to lack of site-specific information, they assigned a fire behavior photo series that matched older logging slash to the harvests, assuming in the process that no post-treatment fuels reduction treatments had ever taken place. They also only modeled surface and moderate- to low-intensity understory fires and constant weather and topographic conditions.</p> <p>This study has little relevance to the Clear Creek project that proposes various vegetation treatments including thinning from below and shelterwood cutting followed by prescribed burning to reduce natural and activity-generated fuels. The fuels and fire behavior conditions created by the project will differ greatly than that modeled by Huff et al. (1995). Under normal summer conditions, fuel modeling indicates that these treatments will effectively modify fire behavior and reduce the intensity of a potential wildfire because they will:</p> <ul style="list-style-type: none"> <li>• increase the probability that wildfire flame lengths would be less than four feet (the maximum flame length where direct attack suppression forces may be effective)</li> <li>• increase canopy base height, which is the lowest height above the ground at which there is a sufficient amount of canopy fuel to propagate a fire vertically into the canopy (the higher the canopy base height, the more difficult it is to initiate a crown fire)</li> <li>• increase the crowning index, which is the 20-foot wind speed needed to support an active or running crown fire (a higher crowning index means that higher wind speeds are needed to initiate and maintain a crown fire)</li> <li>• change the potential wildfire type from a crown fire to a surface fire that burns the surface fuel layer which lies immediately above the ground fuels but below the tree canopy (EA, page 52).</li> </ul> <p>It is important to note that the authors of this study recommend that “prescribed fire, along with mechanical measures if hazardous burning conditions exist, can be used for restoration purposes to regulate stand composition, reduce plant competition, and modify fuels to achieve a desired structure. Over time, prescribed fires, natural fires, selective tree harvesting, or a combination thereof can be used to maintain desired conditions and processes” (page 36). The Clear Creek project proposes to use a combination of mechanical treatments and prescribed burning to meet vegetation objectives described within the EA.</p>
<p>24</p>	<p><b>Ingalsbee, Timothy Ph.D. "Logging for Firefighting: A Critical Analysis of the Quincy Library Group Fire Protection Plan." Unpublished research paper. 1997.</b></p> <p>"The Quincy Library Group's (QLG's) fuelbreak strategy represents a giant step backwards from the progressive development of rational fire policies established by the 1995 Federal Wildland Fire Management Policy and Program Review."</p> <p>"The fact that the QLG admits that its Plan is inconsistent with these new policies (indeed, is almost gleefully defiant of them) says a lot about the credibility of the QLG's self-purported fire management expertise."</p> <p>"In spite of (or more likely because of) the intensive 'fuels reduction' activities associated with commercial logging, the Fountain Fire was truly catastrophic in its effects."</p> <p>"Even 'kinder, gentler' commercial logging still inflicts environmental impacts such as eroded topsoil, degraded water quality, destroyed wildlife habitat, and extirpated species that are every bit as much symptoms of forest health problems as large-scale, severe wildfires."</p> <p>"And after spending millions of dollars creating the SNEP Report, it seems wise to use its information, not ignore it or opportunistically select out statements</p>

	<p>clearly worded as assumptions, values, or goals which run contrary to factual research findings. The QLG Plan has much more to do with timber extraction than with genuine fire protection, and in that respect, it constitutes more of a forest health threat than a real solution."</p> <p>"The QLG Bill resembles similar 'panic legislation' that was passed during the early 1970s in which, following some large-scale wildfires in California, Congress allowed the Forest Service to access emergency firefighting funds to conduct 'presuppression' timber sales. Many fuelbreaks were cut in the Sierras during this period, and while costs rapidly rose into tens of millions of dollars, most of these fuelbreaks failed to perform adequately during wildfire suppression incidents. Congress quickly had to take away this funding source from the Forest Service. What has become of these old fuelbreaks? Almost without exception, the agency failed to monitor or maintain them, and in a modern-day version of 'cut and run' logging, many of these old fuelbreaks have converted to chaparral brush and 'dog-hair' thickets ... a much more flammable vegetation type than the original forest cover. The QLG Bill appears to be 'deja vu' without evidence of Congress or the QLG being aware of this history of previous fuelbreak programs."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary that criticizes H.R. 858, the Quincy Library Group Forest Recovery and Economic Stability Act of 1997, which has no relevance to the Clear Creek project. H.R. 858 directed the Secretary of Agriculture to conduct a pilot project on Federal lands on the Plumas, Lassen, and Tahoe National Forests in California to demonstrate the effectiveness of specified fire resiliency resource management activities recommended by the Quincy Library Group. The bill did not pass into law.</p>
25	<p><b>Ingalsbee, Timothy Ph.D. 2000. "Commercial Logging for Wildfire Prevention: Facts Vs. Fantasies"</b></p> <p>"The notion that commercial logging can prevent wildfires has its believers and loud proponents, but this belief does not match up with the scientific evidence or history of federal management practices. In fact, it is widely recognized that past commercial logging, road-building, livestock grazing and aggressive firefighting are the sources for "forest health" problems such as increased insect infestations, disease outbreaks, and severe wildfires."</p> <p>"How can the sources of these problems also be their solution? This internal contradiction needs more than propaganda to be resolved. It is time for the timber industry and their supporters to heed the facts, not fantasies, and develop forest management policies based on science, not politics."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary. "Commercial logging" cannot prevent wildfires - the Forest Service has never said it would. To "prevent" wildfires, one would have to stop all human and natural (i.e. lightning) ignition sources. However, vegetation treatments of all kinds are done to modify fire behavior within treated areas. Ample evidence suggests that thinning can be used to modify fire intensity and severity. For example:</p> <ul style="list-style-type: none"> <li>• Ager et al. 2007. A simulation study of thinning and fuel treatments on a wildland-urban interface in eastern Oregon, USA. Landscape and Urban Planning 80 (2007) 292-300.</li> <li>• Carey, Henry, Schumann, Martha. 2003. Modifying Wildfire Behavior – The Effectiveness of Fuel Treatments. National Community Forestry Center. Southwest Region Working Paper 2.</li> <li>• Cram, D.S., T.T. Baker, and J.C. Boren. 2006. Wildland fire effects in silviculturally treated versus untreated stand of New Mexico and Arizona. USDA Forest Service Rocky Mountain Research Station. RMRS-Rp-55.</li> <li>• Dailey et al. 2008. Fire behavior and effects in fuels treatments and protected habitat on the Moonlight Fire. USDA Forest Service, Pacific Southwest Research Station.</li> <li>• Finney et al. 2005. Stand and landscape-level effects of prescribed burning on two Arizona wildfires. Canadian Journal of Forest Research. 35: 1714-1722</li> <li>• Fites et al. 2007. Fire behavior and effects relating to suppression, fuel treatments, and protected areas on the Antelope Complex Wheeler Fire. USDA</li> </ul>

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26	<p><b>Ingalsbee, Timothy Ph.D. “Logging without Limits isn't a Solution to Wildfires” published in the <i>Portland Oregonian</i>, August 6, 2002</b></p> <p>"Since the 'New Perspectives' program of the early 1990s, the agency has tried to dodge public opposition to commercial logging by using various euphemisms, such as this gem from the Siskiyou National Forest: Clearcuts are called 'minimum green tree retention units.' Accordingly, Forest Service managers have believed that if they simply refer to logging as 'thinning,' or add the phrases 'fuels reduction' or 'forest restoration' to the title of their timber sale plans, then the public will accept these projects at face value, and business-as-usual commercial logging can proceed. In the face of multiple scandals and widespread public skepticism of the Forest Service's credibility, it seems that only Congress is buying the agency's labeling scheme."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary, written over 10 years ago.</p> <p>In the paragraph following the one the commenter cites, the author writes, “There does appear to be growing consensus among forest managers, fire scientists, and environmentalists, too, on the need for some kind of carefully targeted tree thinning as one tool for reducing wildfire hazards. But the consensus centers on the need to thin the ‘thin stuff’ – brush and understory trees – not the ‘thick stuff’ – large diameter mature and old growth trees.” The author is correct that research suggests thinning can be an effective tool for reducing fire intensity and severity within treated areas (see literature citations listed in the response to #25 above). The Clear Creek project proposes to use thinning from below in some treatment areas to reduce fire intensity and severity as well as meet other vegetative objectives. The larger, fire-resistant trees and fire resistant tree species will be retained.</p>
27	<p><b>Ingalsbee, Timothy Ph.D. “The wildland fires of 2002 illuminate fundamental questions about our relationship to fire.” <i>The Oregon Quarterly</i>, Winter 2002</b></p> <p>“Thus, the use of commercial logging for fire hazard reduction poses yet another paradox: Logging removes the trees that normally survive fires, leaves behind the trees that are most often killed by fire, increases flammable fuel loads, and worsens fire weather conditions.” (pg. 5)</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary. The Clear Creek project will retain the larger, fire-tolerant trees and fire-tolerant species (EA, page 51). Natural and activity-generated slash will be treated following harvest (EA, pages 29-30 and 53).</p>

<p>28</p>	<p><b>Ingalsbee, Timothy Ph.D. "Fanning the Flames! The U.S. Forest Service: A Fire-Dependent Bureaucracy." <i>Missoula Independent</i>. Vol. 14 No. 24, June 2003</b></p> <p>"In the face of growing public scrutiny and criticism of the agency's logging policies and practices, the Forest Service and their enablers in Congress have learned to mask timber sales as so-called 'fuels reduction' and 'forest restoration' projects. Yet, the net effect of these logging projects is to actually increase fire risks and fuel hazards."</p> <p>"Decades of encouraging private logging companies to take the biggest, oldest, most fire-resistant trees from public lands, while leaving behind a volatile fuel load of small trees, brush, weeds, stumps and slash has vastly increased the flammability of forestlands."</p> <p>"In addition to post-fire salvage logging, the Forest Service and timber industry advocates in Congress have been pushing pre-fire timber sales, often falsely billed as hazardous fuels reduction or 'thinning' projects, to lower the risk or hazard of future wildfires. In too many cases, these so-called thinning projects are logging thick-diameter fire-resistant overstory trees instead of or in addition to cutting thin-sized fire-susceptible understory trees. The resulting logging slash and the increased solar and wind exposure can paradoxically increase the fuel hazards and fire risks."</p> <p><b>Forest Service Response:</b> This article is opinion commentary and the points made are essentially the same as those in the above cited articles written by the same author. Please see responses to #25-27.</p>
<p>29</p>	<p><b>Ingalsbee, Timothy Ph.D. 2005. "A Reporter's Guide to Wildland Fire." Published by the Firefighters United for Safety, Ethics, and Ecology (FUSE), January 2005</b></p> <p>"More than any other recent human activity, the legacy of commercial timber extraction has made public forests more flammable and less resilient to fire. Firstly, clearcut and high-grade logging have historically taken the largest, most fire-resilient, most commercially-valuable trees, and left behind dead needles and limbs (logging debris called "slash"), along with smaller trees and brush that are less commercially valuable but more flammable than mature and old-growth trees. The net effect is to increase the amount of available hazardous fuel."</p> <p>"Secondly, the removal of large overstory trees also changes the microclimate of logged sites, making them hotter, drier, and windier, which increases the intensity and rate of spread of wildfires. Third, the creation of densely-stocked even-aged plantations of young conifers made sites even more flammable since this produced a solid mass of highly combustible conifer needles within easy reach of surface flames. These changes in the fuel load, fuel profile, and microclimate make logged sites more prone to high-intensity and high-severity wildfires."</p> <p><b>Forest Service Response:</b> The quotation is irrelevant to the Clear Creek project because no clearcut or high-grade logging is proposed. Please see responses to #25-27.</p>
<p>30</p>	<p><b>Jalkotzy, M.G., P.I. Ross, and M.D. Nasserden. 1997. "The Effects of Linear Developments on Wildlife: A Review of Selected Scientific Literature." Prepared for Canadian Association of Petroleum Producers. Arc Wildlife Services Ltd., Calgary. 115pp.</b></p> <p>"Linear developments may result in habitat avoidance for grizzly bears. Logging-truck traffic in the Kimsquit Valley in British Columbia resulted in a 78% reduction in use of the "Zone of Hauling Activity" by radio collared bears compared to non-hauling periods (16). For 14 hours/day, 3%-23% of each bear's home range was unavailable to them because of disturbance."</p> <p>"The impacts of land-use activities on wolverines are <i>likely</i> similar to those on grizzly bears. Wolverines seem to have been most affected by activities that fragment and supplant habitat, such as human settlement, extensive logging, oil and gas development, mining, recreational developments, and the accompanying access. Wolverine populations that are now at the edge of extirpation have been relegated to the last available habitat that has not been developed, extensively modified, or accessed by humans."</p>

	<p><b>Forest Service Response:</b> The Clear Creek project will have no effect on grizzly bears because: 1) it is not located within a grizzly bear recovery area or within an identified linkage zone; 2) it is not within an area identified as “occupied” by grizzly bears; and 3) there is no evidence that grizzly bears have been in the project area in several decades (EA, page 83).</p> <p>Clear Creek project activities could temporarily displace a wolverine if one were present during implementation. However, the potential of this occurring is low because project activities are concentrated in areas that have been previously developed with roads and past harvest, which are considered to be low quality habitat for wolverines. The most suitable habitat for wolverines within the Clear Creek project area would remain undisturbed. The project would not lead to a loss of species viability or contribute to a trend toward Federal listing because no denning habitat would be affected and proposed activities would not promote or facilitate increased motorized or non-motorized human use (EA, page 87).</p>
31	<p><b>Keene, Roy “Logging does not prevent wildfires” Guest Viewpoint, the Eugene Register Guard January 11, 2009</b></p> <p>“History, not science, refutes the claim that logging helps to prevent forest fires. The forests of the West are far more vulnerable to fire due to a century of industrial logging and fire suppression. Logging has removed most of the older, fire-resistant trees from the forests. Fire suppression has encouraged many smaller and more flammable trees, brush and dense plantations to fill the holes. Logging has set the forests of the West up to burn big and hot. More logging will not fix this.”</p> <p><b>Forest Service Response:</b> The article is opinion commentary that was written in response to a guest viewpoint published in an Oregon newspaper. Please see responses to #25-27. As stated in #25, logging cannot prevent wildfires and the Forest Service has never said it would. However, vegetation treatments of all kinds are done to modify fire intensity and severity within treated areas, which is supported by numerous studies (see literature citations listed in response to #25. The Clear Creek project will retain the larger, fire resistant trees and fire-resistant tree species (EA, page 52).</p>
32	<p><b>Keene, Roy Restorative Logging? “More rarity than reality” Guest Viewpoint, the Eugene Register Guard March 10, 2011</b></p> <p>“Fear of wildfire is heavily used to sell these forest “restoration” schemes. Logging has not been proven, in practice, to reduce fire frequency or intensity. Historically, the largest, most destructive blazes, like the Tillamook conflagration, were caused from logging or fueled by slash. Unlogged forests, cool and shaded, are typically more fire resistant than cut over, dried-up stands choked with slash and weeds.</p> <p>Large-scale logging (by any name) has devalued our forests, degraded our waters, damaged soils, and endangered a wide variety of plants and animals. How will the current round of politically and environmentally propelled ‘restorative’ logging proposals differ, in practice, from past logging regimes?”</p> <p><b>Forest Service Response:</b> The article is opinion commentary that was printed in an Oregon newspaper. The Tillamook Burn that the author refers to was a series of large forest fires in the northern Oregon Coast Range mountains 50 miles west of Portland. It began in 1933 and struck at six-year intervals through 1951, burning a combined total of 355,000 acres. The largest of the four fires started in August 1933 within a logging operation. Near-record weather conditions with a 104° temperature and relative humidity of about 20 percent combined with dry fuel conditions contributed to the rapid growth and high intensity and severity of the fire. The subsequent fires in 1939, 1945, and 1951 primarily reburned the area affected by the first fire.</p> <p>The harvest proposed in the Clear Creek project differs greatly from the logging that occurred in the Pacific Northwest in the 1930s. In the 1930s, it is likely that clearcutting was the harvest method employed at the time and slash was rarely, if ever, treated. The Clear Creek project will use thinning from below and some shelterwood cutting to achieve vegetation objectives. Natural and activity generated slash will be treated. The larger, fire-resistant trees will be retained.</p>
33	<p><b>Keppeler, Elizabeth T. Robert R. Ziemer Ph.D., and Peter H. Cafferata "Effects of Human-Induced Changes on Hydrologic Systems." An American Water Resources Association publication, June 1994</b></p> <p>"Timber harvesting operations affect hydrologic processes by reducing canopy interception and evapotranspiration. Many studies have documented changes in soil properties following tractor yarding (Stone, 1977; Cafferata, 1983), and low-ground-pressure skidding (Sidle and Drica, 1981). More recently, researchers have evaluated cable yarding (Miller and Sirois, 1986; Purser and Cundy, 1992). In general, these studies report decreased hydraulic conductivity and</p>

	<p>increased bulk density in forest soils after harvest."</p> <p><b>Forest Service Response:</b> The cited article is about a study conducted in coastal northwestern California to determine changes in soil moisture and pore pressure after clearcutting. The study has little, if any, relevance to the Clear Creek project because no clearcutting will occur. Also, there is a substantial difference in precipitation amount and pattern between coastal California where the study was conducted and the drier low elevation areas in western Montana where the Clear Creek project is located. The Clear Creek project will not detrimentally affect water yield (EA, page 64). The project will maintain soil productivity and comply with Region 1 soil quality standards, which include bulk density (EA, page 75).</p>
34	<p><b>Klein, Al 2004. <i>Logging Effects on Amphibian Larvae Populations in Ottawa National Forest.</i></b></p> <p>"Among these four species of amphibians, the spotted salamander is most likely to be affected adversely by the logging as this species of salamander relies on dense forests with full canopies (Harding, 1997)."</p> <p>"Looking at the study on a larger scale, the potential for changes caused by logging is great. Absence of trees could influence water temperature by altering available sunlight, conductivity by changing the amount of organic matter that collects in the vernal ponds, or pH if the logging process deposits foreign residues to the area. Also heavy equipment used to harvest the timber has the potential to alter the terrain. Modifications to the landscape could change how water flows and collects at the surface and change the size, shape, and location of the vernal ponds. Loss or alteration to small temporary water sources less than four hectares can be extremely detrimental to amphibians water (Semlitsch, 2000). Without vernal ponds amphibians would have difficulty inhabiting forested areas because they rely on the ponds as breeding grounds. If logging disturbs the ponds, amphibian populations could diminish in the areas that surround these vernal pools."</p> <p><b>Forest Service Response:</b> Although the title of the cited article infers that the effects of logging were studied, only 'pre-logging' data was collected in seven vernal ponds in Michigan's Upper Peninsula. No post-logging data was collected; therefore, no conclusions regarding the effects of logging on amphibians can be drawn from this article that was written by a college student attending the University of Notre Dame. The second quote provided by the commenter is an unsupported assumption by the author. In his assumptions, the author also fails to define the harvest type and logging method to be used. Silvicultural practices vary depending on the objectives to be achieved.</p> <p>The spotted salamander is found in the eastern United States and Canada; thus the Clear Creek project area in western Montana is far outside its range. Resource protection measures for the Clear Creek project include the prohibition of timber harvest activities within stream buffers (EA, pages 40-41), thus there will be no disturbance to riparian areas or change in stream shade. There are no ponds within or near proposed treatment areas. Timber harvest will have no detrimental effects to water yield (EA, page 64).</p>
35	<p><b>Laverty, Lyle, USDA Forest Service and Tim Hartzell U.S. Department of the Interior "A Report to the President in Response to the Wildfires of 2000", September 8, 2000.</b></p> <p>"The Congressional Research Service (CRS) recently addressed the effect of logging on wildfires in an August 2000 report and found that the current wave of forest fires is not related to a decline in timber harvest on Federal lands. From a quantitative perspective, the CRS study indicates a very weak relationship between acres logged and the extent and severity of forest fires. To the contrary, in the most recent period (1980 through 1999) the data indicate that fewer acres burned in areas where logging activity was limited."</p> <p>"Qualitative analysis by CRS supports the same conclusion. The CRS stated: "[T]imber harvesting removes the relatively large diameter wood that can be converted into wood products, but leaves behind the small material, especially twigs and needles. The concentration of these fine fuels on the forest floor increases the rate of spread of wildfires." Similarly, the National Research Council found that logging and clearcutting can cause rapid regeneration of shrubs and trees that can create highly flammable fuel conditions within a few years of cutting."</p> <p><b>Forest Service Response:</b> The cited paper is a report prepared in response to then President Clinton's request for recommendations on how to best respond to</p>

	<p>the 2000 wildfires, reduce the impacts of the wildland fires on rural communities, and ensure sufficient firefighting resources in the future.</p> <p>The quotes provided by the commenter were made in response to critics of the President’s proposal to protect roadless areas. These critics expressed concern that the roadless policy could increase wildfire risks. On the next page, the report supports thinning stands to reduce small diameter trees, underbrush, and accumulated fuels. It cites a study that demonstrated fuel reduction treatments (which included thinning) were effective in mitigating fire severity. In the Clear Creek project thinning will be used to modify fire behavior as well as meet other vegetation objectives. The large, fire-resistant trees will be retained and the natural and activity-generated slash will be treated. No clearcutting is proposed.</p>
<p>36</p>	<p><b>Lawrence, Nathaniel, NRDC senior attorney “Gridlock on the National Forests” Testimony before the U.S. House of Representatives Subcommittee on Forests and Forest Health (Committee on Resources) December 4, 2001.</b></p> <p>“I will turn first to forest thinning aimed at reducing fire risks. There is surprisingly little scientific information about how thinning actually affects overall fire risk in national forests.”</p> <p>“How can it be that thinning could increase fire risks? First, thinning lets in sunlight and wind, both of which dry out the forest interior and increase flammability. Second, the most flammable material - brush, limbs, twigs, needles, and saplings - is difficult to remove and often left behind. Third, opening up forests promotes brushy, flammable undergrowth. Fourth, logging equipment compacts soil so that water runs off instead of filtering in to keep soils moist and trees healthy. Fifth, thinning introduces diseases and pests, wounds the trees left behind, and generally disrupts natural processes, including some that regulate forest health, all the more so if road construction is involved.”</p> <p><b>Forest Service Response:</b> The first statement may have been incorrect in 2001 when it was made, and is certainly incorrect now. A number of studies and reports have been made over the years investigating the effect of thinning on fire behavior and effects (refer to the list of some of these studies and reports in the response to #25).</p> <p>The EA acknowledges that wind exposure may be increased within shelterwood cutting units and surface fuels could be drier as a result. Thus, fire researchers indicate it is critical that surface fuels be treated to minimize fire intensity (Graham et al. 1999; Agee and Skinner 2005; Graham et al. 2004; Peterson et al. 2005). Prescribed burning will be conducted following harvest activities (EA, page 53).</p> <p>The quotation given above also says that “logging equipment compacts soil so that water runs off instead of filtering in to keep soils moist.” It is true that logging equipment, particularly ground-based equipment) can compact soils, but project design, resource protection measures, and best management practices effectively minimize soil disturbance. The Clear Creek project will meet Region1 soil quality standards (EA pages 75-79 and the Soils report in the Project File). No runoff or erosion is expected because forest floor, ground cover and soil organic matter will be retained (EA, page 77).</p> <p>The quotation says that “thinning introduces diseases and pests, wounds the trees left behind”. The only disease of concern in the project area that may be exacerbated by thinning is Armillaria root disease which is why shelterwood cutting (regeneration harvest) followed by planting with disease resistant species is prescribed instead of thinning. Careful logging and contract administration keeps the amount of residual tree damage (i.e. wounds) to a minimum.</p>
<p>37</p>	<p><b>Leitner, Brian. “Logging Companies are Responsible for the California Wildfires.” the Democratic Underground, October 30, 2003.</b></p> <p>“Those who would argue that this form of logging has any positive effects on an ecosystem are clearly misinformed. This type of logging has side effects related to wildfires, first and foremost being that the lumber companies aren’t interested in hauling out all the smaller trees, branches, leaves, pine needles, sawdust, and other debris generated by cutting all these trees. All this debris is left on site, quickly dries out, and is far more flammable sitting dead on the ground than it was living in the trees. Smaller, non-commercially viable trees are left behind (dead) as well - creating even more highly flammable fuel on the ground.</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary. The quote provided by the commenter is a statement made by the author specific to clearcutting. The Clear Creek project does not propose any clearcutting.</p>

38	<p><b>Long, Richard D., U.S. Department of Agriculture Office of Inspector General "Western Region Audit Report: Forest Service National Fire Plan Implementation" Report No. 08601-26-SF, November 2001.</b></p> <p>"We concluded that commercial timber sales do not meet the criteria for forest restoration." (Pg. 11)</p> <p><b>Forest Service Response:</b> The citation pertains to the use of National Fire Plan funds to restore and rehabilitate watersheds that were severely burned by wildfires in 2000. This has no relevance to the Clear Creek project.</p>
39	<p><b>Mann, Charles C. Ph.D. and Mark L. Plummer Ph.D. "Call for 'Sustainability' in Forests Sparks a Fire" Science 26 March 1999: Vol. 283. no. 5410, pp. 1996 – 1998</b></p> <p>"In hopes of ending conflicts over "multiple use," an independent scientific committee has proposed that "ecological sustainability" should become the principal goal in managing the U.S. national forests and grasslands, which since 1960 have been under a congressional mandate to serve industry, recreation, and conservation all at once."</p> <p><b>Forest Service Response:</b> The cited article highlights the debate over National Forest management. In 1997, the Clinton administration assembled a scientific advisory panel to provide scientific and technical advice on revising National Forest Management Act (NFMA) forest planning regulations. According to the article, the panel's recommendation was that ecological sustainability should be the principal goal in managing the national forests.</p> <p>The Clear Creek project is an integrated resource project that emphasizes ecological resilience (EA, pages 11-15).</p>
40	<p><b>Maser, C. Ph.D., and J. M. Trappe Ph.D. "The Seen and Unseen World of the Fallen Tree", 1984 USDA Forest Service, GTR-PNW-164</b></p> <p>"Logging removes a mass that harbor a myriad of organisms, from bacteria and actinomycetes to higher fungi. The smaller organisms, not visible to the unaided eye, are still important components of the system."</p> <p><b>Forest Service Response:</b> The quotation from the cited article actually says, "<b>Fallen trees</b> [emphasis added] harbor a myriad of organisms, from bacteria and actinomycetes to higher fungi" (page 16). The authors describe the various ecological benefits of decomposing wood of fallen trees in the Pacific Northwest. The Clear Creek project will not remove any decomposing, downed wood. Coarse woody debris (standing and downed) will be maintained within treatment units in accordance with the guidelines described in the Lolo National Forest Coarse Woody Material Guide (EA, page 38).</p>
41	<p><b>Maser, C. Ph.D., R. F. Tarrant, J. M. Trappe Ph.D., and J. F. Franklin Ph.D. 1988 "The Forest to the Sea: A Story of Fallen Trees" USDA Forest Service, GTR-PNW-GTR-229</b></p> <p>"Logging removes mature and maturing trees which conserve essential elements, whereas the area containing new very young planted trees following logging are susceptible to erosion and essential element loss." (pg.5)</p> <p>"Logging removes tree parts that would have created and maintained diversity in forest communities." (pg. 44)</p> <p><b>Forest Service Response:</b> The first quotation provided by the commenter is not a direct quote from the article. On page 5, the authors write, "The forest's character changes with succession. Net primary productivity is greater in young forests than in old ones. Old forests conserve nutrients, whereas very young forests are susceptible to erosion and nutrient loss (Franklin and others 1981)." Logging is not mentioned. This statement is made in Chapter 1, which is entitled "Coarse Woody Debris in Forests and Plantations of Coastal Oregon". The second "quotation" provided by the commenter is also not a direct quote from the cited article. On page 44, the authors write, "Fallen trees also create and maintain diversity in forest communities." Logging is not mentioned. This statement is made in Chapter 2 entitled, "What We Know About Large Trees that Fall to the Forest Floor", which is written about Pacific Northwest forests.</p> <p>In the Clear Creek project, coarse woody debris (standing and downed) will be maintained within treatment units in accordance with the guidelines described in the</p>

	<p>Lolo National Forest Coarse Woody Material Guide (EA, page 38). The larger trees will be retained. Harvest treatment will not increase erosion because standard operating procedures and site-specific resource protection measures (EA, pages 37-38) will minimize the operational footprint and maintain the forest floor, ground cover, and soil organic matter (EA, page 77 and Soil report in the Project File).</p>
<p>42</p>	<p><b>McIntosh, B.A., J.R. Sedell, J.E. Smith, R.C. Wissmar S.E. Clarke, G.H. Reeves, and L.A. Brown “Management history of eastside ecosystems: changes in fish habitat over 50 years, 1935-1992.” 1994. GTR-321 93-181</b></p> <p>“In addition to the direct effects of habitat loss and fragmentation, logging typically reduces ecosystem health by: a) damaging aquatic habitats through siltation, reduction in stream complexity and increased water temperatures.”</p> <p><b>Forest Service Response:</b> The cited literature discusses how fish habitat has changed in select river basins of eastern Washington and Oregon from 1935 to 1992. In reviewing changes in stream habitat, the authors also reviewed changing patterns in land use, streamflow, and climate regimes over time. The land use history of these river basins includes mining, livestock grazing, road construction, irrigation diversions and other agricultural practices, and timber harvest and associated activities. The authors conclude that a combination of these land-use practices has ‘simplified’ fish habitat, resulting in a loss in the frequency and diversity of habitat types (pools, riffles, side-channels), reduced large woody debris and other structural elements, and declining water quality (temperature). They suggest that to restore fish habitat to a state that will support self-sustaining fish populations, these streams are in need of less fine sediment, more shade, and increased habitat complexity. The quotation provided by the commenter is not found within the cited article.</p> <p>The Clear Creek project is consistent with the restoration recommendations provided in the article. The project includes instream placement of large woody debris, riparian planting, and reduction in fine sediment over the long-term (EA, page 60). Harvest activities will occur outside of stream buffers prescribed by the Inland Native Fish Strategy (INFISH) to protect streams from non-channelized sediment inputs. Because no vegetation removal will occur within riparian areas, existing shade and woody debris recruitment potential will not be affected. Thus, harvest activities will not affect stream temperature (EA, page 68). Modeling suggests that the project will result in a short-term increase in sediment from road maintenance, decommissioning, storage, and use during implementation of project activities. However, once the project is completed, modeling indicates that fine sediment will be reduced below existing levels. In the long-term after project completion, there will be an improving trend in fisheries habitat through the reduction of fine sediment from forest roads below existing levels, the addition of instream woody debris, the stabilization of streambanks in priority areas, and removal of fish passage barriers. Refer to the EA, pages 60-75 and the Hydrology and Fisheries reports in the Project File.</p>
<p>43</p>	<p><b>Moring, John R. Ph.D. 1975. “The Alsea Watershed Study: Effects of Logging on the Aquatic Resources of Three Headwater Streams of the Alsea River, Oregon – Part III.” Fishery Report Number 9 Oregon Department of Fish and Wildlife.</b></p> <p>“Logging practices can indirectly result in changes in the biological components of a stream, and can have direct and indirect effects on the physical environment in streams.</p> <p>The primary environmental changes of concern are the effects of siltation, logging debris, gravel scouring, destruction of developing embryos and alevins, blockage of streamflow, decrease in surface and intragravel dissolved oxygen, increase in maximum and diel water temperatures, changes in pool/riffle ratios and cover, redistribution of fishes, reduction in fish numbers, and reduction in total biomass.”</p> <p><b>Forest Service Response:</b> This article was written in 1975, prior to the advent of Best Management Practices. The study reviewed clearcut logging conducted in the mid-1960s in coastal Oregon. The article makes the following recommendations:</p> <ol style="list-style-type: none"> <li>1. The preservation of buffer strips is essential for the prevention of direct physical changes and indirect biological changes in the stream environment.</li> <li>2. Roads should be designed and constructed so as to minimize their function as a source of excess sediment and mass transport of material in subsequent years. Roads should be designed to utilize natural benches and saddles; sidecast material should be as far away from the stream as possible; unstable soils should be avoided; fish passage should be considered in culvert design.</li> <li>3. No felling should occur into or across the stream or on to the immediate bank</li> <li>4. No logs should be yarded through streams.</li> </ol>

	<p>5. Excess logging debris should be removed from a stream as soon as possible after felling.</p> <p>The Clear Creek project complies with all the recommendations listed above. No timber harvest will occur within stream buffers (EA, pages 40-41). Fish passage barriers will be removed. Road maintenance and road construction (temporary and the ¼ mile of long-term specified road) will apply best management practices. Road construction will occur on stable soils in mid to upper slope locations and contain no stream crossings.</p>
44	<p><b>Naeem, Shahid Ph.D., F.S. Chapin III Ph.D., Robert Costanza Ph.D., Paul R. Ehrlich Ph.D., Frank B. Golley Ph.D., David U. Hooper Ph.D. J.H. Lawton Ph.D., Robert V. O’Neill Ph.D., Harold A. Mooney Ph.D. Osvaldo E. Sala Ph.D., Amy J. Symstad Ph.D., and David Tilman Ph.D. "Biodiversity and Ecosystem Functioning: Maintaining Natural Life Support Processes." Issues in Ecology No. 4. Fall 1999.</b></p> <p>"Biodiversity in managed ecosystems is poor. Less biodiverse communities and ecosystems are more susceptible to adverse weather (such as drought) and exotic invaders, and have greatly reduced rates of biomass production and nutrient cycling."</p> <p>"All of these studies show that ecosystem functioning is decreased as the number of species in a community decreases. Declines in functioning can be particularly acute when the number of species is low, such as in most managed ecosystems including croplands or timber plantations."</p> <p>"Recent evidence demonstrates that both the magnitude and stability of ecosystem functioning are likely to be significantly altered by declines in local diversity, especially when diversity reaches the low levels typical of managed ecosystems."</p> <p><b>Forest Service Response:</b> The cited article is not specific to forest management. It generally discusses the effect of local and global biodiversity on ecosystem processes. The Clear Creek project will not reduce biodiversity or ecosystem function. The project will improve forest stand resilience to natural disturbances (EA, pages 50-51), maintain soil productivity (EA, page 76), and sustain species viability (EA, pages 57-60; 68-75; 79-111).</p>
45	<p><b>Nappier, Sharon. Lost in the Forest: How the Forest Service's Misdirection, Mismanagement, and Mischief Squanders Your Tax Dollars. Taxpayers for Common Sense, 2002.</b></p> <p>"As a result of the Forest Service's well-documented mismanagement over many years of the timber sale program, taxpayers also have been stuck with the tab for hundreds of millions of dollars worth of subsidies to a profitable timber industry."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary written over a decade ago in support of the 2001 Roadless Area Conservation Rule. The article focuses on the construction and maintenance of roads on National Forest System lands.</p> <p>The Clear Creek project proposes no road construction, road reconstruction, or timber harvest in Inventoried Roadless Areas (IRAs) (EA, page 115). The project will construct approximately ¼ mile of new road outside the IRA to connect two existing parallel roads to facilitate the decommissioning of approximately a mile of unneeded road. This new road will be stored following use, negating the need for future maintenance until the road is placed back into service at some time in the future. The project will decommission approximately 31 miles (23 percent) of road and store about 43 miles (32 percent) of the roads under Forest Service jurisdiction within the Clear Creek drainage.</p>
46	<p><b>Noble, Ian R. and Rodolfo Dirzo Ph.D. "Forests as Human-Dominated Ecosystems." Science Vol. 277. No. 5325, pp. 522 - 525. 25 July 1997.</b></p> <p>"Agroforestry does reduce biodiversity. In forests used for logging, whole-landscape management is crucial. Here, emphasis is placed on areas of intensive use interspersed with areas for conservation and catchment purposes. Management strategies for sustainable forestry are being developed, but there is a need for further interaction among foresters, ecologists, community representatives, social scientists, and economists."</p> <p><b>Forest Service Response:</b> "Whole landscape management" is provided in the Lolo National Forest Plan, which is designed to maintain biodiversity. The Clear Creek project proposes vegetation management activities on less than 12 percent of the watershed (harvest is proposed on about 6 percent) within an area that has been previously managed. Please also see response to #44 above.</p>

	<p>The Clear Creek project does not propose agroforestry, which is defined as the management of trees with understory of annual or perennial crops and sometimes livestock to provide food, fiber, fodder, medicine, and building materials.</p>
<p>47</p>	<p><b>Northup, Jim. 1999. "Public Wants More Wilderness, Less Logging on Green Mountain NF". Press Release by Forest Watch, a Vermont-based environmental organization.</b></p> <p>"The U.S. Forest Service has been sitting on a public opinion survey it commissioned, not knowing what to do with the results. The problem is that most people surveyed want more wilderness and less logging on the Green Mountain National Forest (GMNF), while the federal agency seems to want to build more roads and cut more trees."</p> <p>"The survey conducted by Dr. Robert Manning of the School of Natural Resources at the University of Vermont, polled 1,500 Vermont households in the spring of 1995. A survey with similar results was completed last fall for the White Mountain National Forest in New Hampshire. 'It is clear that New England residents value the national forest for many reasons, but non-material values, such as aesthetics and ecological protection, are more important than material values, such as economic development,' said Dr. Manning."</p> <p>"The responses to several survey questions indicate a strong public desire for more areas of wild, untouched nature on the GMNF and less roadbuilding and logging. Very few people supported clearcutting and other types of industrial logging, especially if natural beauty or wildlife habitat were harmed."</p> <p>"For example:</p> <ul style="list-style-type: none"> <li>• 82 percent wanted to ban clearcutting,</li> <li>• 82 percent said logging should not hurt scenic beauty,</li> <li>• 80 percent of the respondents wanted to protect remaining undisturbed forest; and</li> <li>• 72 percent urged prohibition of logging if bear or other wildlife habitat would be harmed."</li> </ul> <p>"Only 36 percent felt that management of the GMNF should emphasize timber and lumber products; and only 15 percent felt that jobs are more important than protection of endangered species."</p> <p>"'The results of this survey and a similar one on the White Mountain National Forest in Vermont should serve as loud wake-up calls to the U.S. Forest Service,' said Northup. 'Forest Service officials have two choices: either begin a major overhaul of the agency's management programs or ignore the wishes of the people they are supposed to serve'."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary regarding a public opinion survey conducted in 1995 (19 years ago) about the management of the Green Mountain National Forest in Vermont. This article is not relevant to the Clear Creek project in Montana. No clearcutting is proposed. Vegetation management activities will occur within an area that has been previously managed. Project activities will not adversely affect wildlife populations or habitat (EA, pages 79-111).</p>
<p>48</p>	<p><b>Okoand Ilan Kayatsky, Dan. "Fight Fire with Logging?" Mother Jones, August 1, 2002</b></p> <p>"Still, forestry experts warned in the 2000 plan that logging should be used carefully and rarely; in fact, the original draft states plainly that the "removal of large merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk."</p> <p>"Now, critics charge that the Bush administration is ignoring that warning. Neil Lawrence, a policy analyst with the Natural Resource Defense Council, claims that Washington has taken a far more aggressive approach to incorporating commercial logging in its wildfire prevention plans. As a result, Lawrence and other critics say, the National Fire Plan is becoming a feeding ground for logging companies. Moreover, critics claim the administration's strategy, far from protecting the lives and homes of those most at risk, could actually increase the likelihood of wildfires."</p>

	<p><b>Forest Service Response:</b> The cited article is opinion commentary written over 10 years ago about the implementation of the National Fire Plan, which has little relevance to the Clear Creek project. Please see responses to #25-27 above.</p>
49	<p><b>Platt, Rutherford V. Ph.D., Thomas T. Veblen Ph.D., and Rosemary L. Sherriff “Are Wildfire Mitigation and Restoration of Historic Forest Structure Compatible? A Spatial Modeling Assessment” Published Online: by the by Association of American Geographers. Sep. 8, 2006</b></p> <p>“In response to catastrophic wildfires, wide-reaching forest management policies have been enacted in recent years, most notably the Healthy Forests Restoration Act of 2003. A key premise underlying these policies is that fire suppression has resulted in denser forests than were present historically in some western forest types. Therefore, although reducing the threat of wildfire is the primary goal, forest managers commonly view fuel treatments as a means to restore historic forest structure in those forest types that are outside of their historic range of variation. This study evaluates where both wildfire mitigation and restoration of historic forest structure are potentially needed in the ponderosa pine–dominated montane forest zone of Boulder County, Colorado. Two spatial models were overlain: a model of potential fireline intensity and a model of historic fire frequency. The overlay was then aggregated by land management classes.</p> <p>Contrary to current assumptions, results of this study indicate that both wildfire mitigation and restoration of historic forest structure are needed in only a small part of the study area, primarily at low elevations.</p> <p>Furthermore, little of this land is located on Forest Service land where most of the current thinning projects are taking place. We question the validity of thinning as a means both to reduce the threat of wildfire and to restore historic forest structure in the absence of site-specific data collection on past and present landscape conditions.”</p> <p><b>Forest Service Response:</b> The Clear Creek project has multiple vegetation objectives: to restore forest stand resilience and resistance to insects and disease by reducing competition-induced mortality; perpetuate desired species by maintaining diversity and breaking up the continuous tree canopy to increase the survival of long-lived trees in the event of a widespread wildfire; and improve big game winter range. Field surveys indicate that the historic 1910 fire and earlier fires, which burned most of the Clear Creek drainage, left behind surviving groups and individual large trees. The vegetative patterns suggest a mixed severity fire regime where the survivor trees may have been more open grown, which allowed them to withstand such a large disturbance event. Current conditions would likely result in larger areas of high severity fire.</p>
50	<p><b>Powell, Douglas S. Ph.D, Joanne L. Faulkner, David R. Darr, Zhiliang Zhu Ph.D. and Douglas W. MacCleery. 1992. "Forest Resources of the United States." USDA Forest Service. Rocky Mt. Forest and Range Experiment Station. Gen. Tech. Rep. RM-234.</b></p> <p>"Private lands are more suitable for timber production. National Forest land is on average of lower productivity and on steeper, higher elevation terrain than are private forestlands."</p> <p><b>Forest Service Response:</b> The cited reference is a compilation of information for the 1992 Resources Planning Act Assessment Update showing the status of the Nation’s forest resource, particularly the timber resource. The second sentence in the provided quotation was stated by the authors (page 8), but not the first. The first sentence is a conclusion drawn by the commenter. The area proposed for timber harvest in the Clear Creek project is designated suitable for timber production in the Lolo National Forest Plan.</p> <p>Regardless, timber production is not the objective of the Clear Creek project. Timber harvest will be used as a tool to achieve vegetation objectives. Trees cut as a by-product from forest health and wildlife habitat improvement activities will be removed and utilized as wood products (EA, page 29).</p>
52	<p><b>Raven, Peter, Ph.D., Jane Goodall, C.B.E., Ph.D., Edward O. Wilson, Ph. D. and over 600 other leading biologists, ecologists, foresters, and scientists from other forest specialties. From a 1998 letter to congress.</b></p> <p>“Less than 5% of America’s original forests remain, and these forests are found primarily on federal lands. Logging in the last core areas of biodiversity is</p>

	<p>destroying the remaining intact forest ecosystems in the United States. At the current rate of logging, these forests and their priceless biological assets will be destroyed within a few decades.</p> <p>We urge Congress to pass the Act to Save America's Forests. It is the first nationwide legislation that would halt and reverse deforestation on all our federal lands. By implementing protective measures based on principles of conservation biology, the bill provides a scientifically sound legislative solution for halting the rapid decline of our nation's forest ecosystems.</p> <p>The Act to Save America's Forests will:</p> <ul style="list-style-type: none"> <li>• Make the preservation and restoration of native biodiversity the central mission of Federal forest management agencies.</li> <li>• Ban extractive logging in core areas of biodiversity and the last remnant original forest ecosystems: roadless areas, ancient forests and special areas of outstanding biological value.</li> <li>• Protect sensitive riparian areas and watershed values by banning extractive logging in streamside buffer zones.</li> <li>• End clearcutting and other even age logging practices on federal land.</li> <li>• Establish a panel of scientists to provide guidance to federal forest management.</li> </ul> <p>We believe it is our professional responsibility to ask Congress to align Federal forest management with modern scientific understandings of forest ecosystems. Passage of the Act to Save America's Forests will give our nation's precious forest ecosystems the best chance of survival and recovery into the 21st century and beyond."</p> <p><b>Forest Service Response:</b> This bill was introduced but not passed into law.</p> <p>The Clear Creek project will not harvest timber or construct roads in "ancient "forests, roadless areas, riparian areas, or in special areas that contain outstanding biological values." Timber harvest activity will occur within areas that have been previously managed. The project does not include clearcutting. Shelterwood cutting is proposed on approximately 247 acres where root disease is prevalent and tree mortality is occurring.</p>
53	<p><b>Raven, Peter, Ph.D., from his February 9, 2001 letter to Senator Jean Carnahan</b></p> <p>"The Act to Save America's Forests is based on the principles of conservation biology. It would make the protection of native biodiversity the primary goal of federal forest management agencies. The bill would protect over 20 million acres of core forest areas throughout the nation, including ancient forests, roadless areas, key watershed, and other special areas. It is a comprehensive, sustainable, and ecologically-sound plan for protecting and restoring the entire federal forest system.</p> <p>If the current pace of logging planned by the Forest Service continues, nearly all of America's ancient and roadless wild forests will soon be lost forever. According to a recent report by the World Resources Institute, only one percent of the original forest cover remains in large blocks within the lower 48 states. The Act to Save America's Forests incorporates the solution recommended by the report, namely to protect core forest areas from any logging and to allow sustainable forest practices around these protected forests. Endorsed by over 600 leading scientists, this bill may be the last hope for America's forests."</p> <p><b>Forest Service Response:</b> Please see response to #52 above.</p>
54	<p><b>Roberson, Emily B. Ph.D., Senior Policy Analyst, California Native Plant Society Excerpt from a letter to Chief Dale Bosworth and 5 members of congress</b></p> <p>"It is well established that logging and roadbuilding often increase both fuel loading and fire risk. For example, the Sierra Nevada Ecosystem Project (SNEP) Science Team (1996) concluded that "timber harvest.... has increased fire severity more than any other recent human activity" in the Sierra Nevada. Timber harvest may increase fire hazard by drying of microclimate associated with canopy opening and with roads, by increases in fuel loading by generation of activity fuels, by increases in ignition sources associated with machinery and roads, by changes in species composition due to opening of stands, by the spread of</p>

	<p>highly flammable non native weeds, insects and disease, and by decreases in forest health associated with damage to soil and residual trees (DellaSala and Frost, 2001; Graham et al., 2001; Weatherspoon et al., 1992; SNEP Science Team, 1996). Indeed a recent literature review reported that some studies have found a positive correlation between the occurrence of past logging and present fire hazard in some forest types in the Interior Columbia Basin (DellaSala and Frost, 2001).”</p> <p><b>Forest Service Response:</b> Concerns identified in the quotation will be mitigated through project design and resource protection measures (EA, page 30-34). Natural and project-generated slash will be treated following harvest activities to mitigate fire hazard.</p> <p>The cited letter also says, “Like most in the scientific and conservation community, California Native Plant Society is neither in favor of or opposed to logging per se. Instead we advocate forest, fire and fuels management practices that minimize danger to lives and property; create and maintain sustainable, productive forest ecosystems dominated by viable plant species; conserve rare and imperiled species through their natural ranges; and protect water quality and supply, soils and other forest ecosystem services and resources.” The Clear Creek project will maintain sustainable productive forest ecosystems, conserve rare plants, and protect water quality and supply, soils, and other forest resources (EA, pages 48-117).</p>
55	<p><b>Roelofs, Terry D. Ph.D. Testimony for the California State Water Board and Regional Water Quality Control Boards Regarding Waivers of Waste Discharge Requirements on Timber Harvest Plans. August 2003.</b></p> <p>“I will discuss my views on how activities related to timber harvest adversely affect coastal salmonids in California by destroying, altering, or otherwise disturbing the freshwater habitats upon which these fish depend during crucial phases of their life cycle. I base these opinions on my research and observations in the field, as well as my review of and familiarity with the scientific literature and publications of government agencies, commissions, and scientific review panels. Below I discuss in some detail the life history and habitat needs of coho salmon to illustrate how timber harvest and related roads affect this threatened species. Although Chinook salmon and steelhead trout have similar life histories and habitat needs, and also are negatively affected by timber harvest, I will use coho salmon in my discussion.”</p> <p>“Loss or degradation of stream habitat has been and remains the single most significant cause of the decline of anadromous salmonids in general in the Pacific Northwest. In my experience the most pervasive and severe impacts to coastal watersheds in California inhabited by coho salmon result from logging and associated activities. These activities cause significant alteration and degradation to coho salmon habitat by 1) increasing sediment input to salmon bearing streams and their tributaries; 2) by decreasing input of LWD into waterways; 3) by altering streamflow regimes, increasing the likelihood of scouring flows and flooding; and 4) by increasing water temperatures. These pervasive changes due to timber harvest decrease the complexity and suitability of coho salmon habitat, including adversely affecting insects and other organisms that provide food for fish.”</p> <p><b>Forest Service Response:</b> The cited testimony is in support of the issuance of waste discharge permits on timber harvest plans in the north coast region of California, which has no relevance to the Clear Creek project in Montana. The author also says that his statements are confined to the geographic region covered by the North Coast Regional Water Quality Control Board in California. The Clear Creek Environmental Assessment and fisheries report in the Project File discuss the potential short-term and long-term effects to fish and their habitat (EA, pages 66-75). Project design, Best Management Practices, and other resource protection measures will minimize the potential for sediment delivery. Reduced sediment delivery, riparian planting, instream woody debris placement, removal of fish passage barriers, and stream bank stabilization activities as part of the Clear Creek project will improve fish habitat over time (EA, page 68).</p>
56	<p><b>Rudzitis, Gundars. 1999 “Amenities Increasingly Draw People to the Rural West” Rural Development Perspectives, vol. 14, no. 2</b></p> <p>“People moving to the region may do so for reasons related to the social environment and the physical landscape but not care about specific Federal land management practices. We found this not to be true, since 92 percent were concerned with how Federal lands were managed. The most frequent preferences for managing Federal lands were water/watershed and ecosystem protection (table 3). Timber harvesting was cited by 16 percent, grazing and ranching by 6 percent, and mineral exploration/mining by less than 1 percent. Overall, protective strategies made up 76 percent of the preferred management strategies and commodity-based strategies 23 percent. This same trend is evident for the second and third most stated preferences. These findings also contradict the longstanding view of the Federal lands as a public warehouse of commodities to be harvested and jobs to be filled. For newcomers in the rural West, the value</p>

	<p>of these public lands is related to protecting and preserving them.”</p> <p><b>Forest Service Response:</b> In the late 1980s, the author of the cited article conducted a study of why 1800 people migrated into a sample of 15 western counties with high levels of physical amenities. In 1995, the author conducted another survey with a sample of 571 residents in a 100-county area in the interior Columbia River basin. Table 3 referenced in the quotation lists the most important public land uses cited by newcomers to the rural West. The preferences given were protect water/watershed 20.2%; protect ecosystems 18.3%; recreational uses 16.9%; timber harvesting 16.3%; preserve wilderness values 9.6%; protect fish/wildlife habitat 9.1%; grazing and ranching 5.9%; mineral exploration/extraction 0.5%; and other 1.7%. The difference between the highest preference and timber harvest was slightly less than 4 percent. The article also states that 71 percent of rural persons favored some timber harvesting, compared with 62 percent of urbanites. The author suggests that the emphasis of survey respondents appeared to be on good stewardship, with commodity production allowed only if the ecosystems of the Federal lands are not degraded.</p> <p>It is uncertain if these 20-year old opinion survey results are valid today particularly after the recent economic downturn, a decade of large wildfires across the West, and insect-induced tree mortality that has occurred across large expanses of forestland in places like Colorado. The Clear Creek project was developed collaboratively with the public (EA, pages 7 and 16). Timber harvest activities will occur within an area that has been managed in the past. Other activities included in the project will improve water quality, stream function, and fish habitat (EA, pages 60-75). The project will also improve big game winter range conditions in an area that is locally popular for elk hunting (EA, page 111).</p>
57	<p><b>Scott, Mark G. “Forest Clearing in the Gray’s River Watershed 1905-1996” A research paper submitted in partial fulfillment of the requirements for the degree of Master Of Science In Geography Portland State University, 2001</b></p> <p>“Once clear-cutting has occurred, regulation and human silvicultural practices become responsible for the revegetation that follows. The creation of new forest succession patterns are the result of human control over the growing environment. Rather than proceeding at a natural pace, humans attempt to speed up the forest succession process to quickly return to a situation where harvesting is again possible. Reforestation of the disturbed area after clear-cutting also emphasizes maintaining control over the distribution and quality of forest species.</p> <p>Simplification is a state that results from the forest being harvested before it reaches maturity. Logging simplifies forest ecosystems (Dudley et al 1995) by narrowing the age range of the stand and suppressing diversification through repeated harvesting, burning to remove slash, and replanting with hybrid seedlings. Simplification affects the health and productivity of the forest because simplified forests lack the variety found in older stands, including species diversity, vertical structure, and microhabitat. From an ecological standpoint, a simplified forest of a particular age has less overall bio-mass per acre than a natural forest of the same age, but a simplified forest produces a higher volume of merchantable timber.</p> <p><b>Forest Service Response:</b> The cited paper is a review of timber harvest activities over 90 years within the Gray’s River watershed located in coastal southwest Washington. Nearly all the land within the Gray River watershed is owned by private timber companies. The paper discusses the use of clearcutting and loss of old growth forests within the watershed. This article has no relevance to the Clear Creek project in Montana because no clearcutting will occur; no activities within old growth stands will occur; and the forest type, climate, and past harvest history are very different from that of the Gray’s watershed.</p>
58	<p><b>Short, Brant, Ph.D. and Dayle C. Hardy-Short Ph.D. "Physicians of the Forest": A Rhetorical Critique of the Bush Healthy Forest Initiative”</b></p> <p>“Within this volatile atmosphere the Bush Administration presented a new proposal for fire prevention called the "Healthy Forest Initiative." The plan received wide coverage in the national media in August and September 2002 and continues to be at the center of an attempt to significantly shift public land management in the United States. At the core of the plan is an effort to create private sector incentives to promote logging/thinning projects in the national forests.”</p> <p><b>Forest Service Response:</b> The article is opinion commentary written in 2003 about the debate over federal fire policy following the 2002 fire season and issuance of the Bush Administration’s Healthy Forest Initiative. The Clear Creek project is not being proposed under the authority of the Healthy Forests Restoration Act (HFRA) that stemmed from the Healthy Forest Initiative. The emphasis of the Clear Creek project is to restore and maintain ecological resilience.</p>
59	<p><b>Sierra Club. 2005 “Ending Commercial Logging on Public Lands”</b></p>

	<p>“Logging on the National Forests provides less than 5% of the nation's timber supply, but costs the taxpayers more than 1 billion dollars in subsidies every year. Nor is logging a good job provider compared to recreation, which by Forest Service estimates provides over 30 times the economic benefits of logging. These forests are the last remnants of the virgin forests that covered the country, and now have far more value as forest ecosystems, watershed/water supply protection, and recreational assets than for logging. In fact, the justification for the Weeks Act in 1911 which established national forests in the east, was watershed protection.</p> <p>(A major barrier to the Forest Service changing its ways is that these increased recreational economic benefits flow into the local economy, not to the Forest Service itself, whereas extractive uses of the national forests contribute directly to Forest Service budgets.)</p> <p>“Our nation is engaged in a great debate over the real purpose of our national forests, with the weight of public opinion swinging more and more strongly toward preservation. Certainly this nation should not be subsidizing logging when it is clear that we understand so little about the functioning of these enormously complex and ancient forest ecosystems that provide millions of people with clean air and water, as well as homes for a myriad of plants and wildlife that can live nowhere else.”</p> <p><b>Forest Service Response:</b> The cited reference is opinion commentary supporting the end to commercial logging on National Forests. Please see responses to #5, 9, 52-54 above.</p>
60	<p><b>Slaymaker, Olav Ph.D. “Assessment of the Geomorphic Impacts of Forestry in British Columbia” <i>AMBIO: A Journal of the Human Environment</i> 29(7):381-387. 2000</b></p> <p>“Timber harvesting in British Columbia influences (a) forest hydrology; (b) fluvial geomorphology; (c) terrain stability; and (d) integrated watershed behavior. Impacts on forest hydrology are well understood and include increased average runoff, total water yield, increased storm runoff and advances in timing of floods. Stream channels and valley floors are impacted differently by fine sediment, coarse sediment and large woody debris transport. Terrain stability is influenced through gully and mass movement processes that are accelerated by timber harvesting. Impacts on integrated watershed behavior are assessed through disturbed sediment budgets and lake sediments.”</p> <p><b>Forest Service Response:</b> The article states that most of the timber harvesting assessed was clearcutting. No clearcutting will occur as part of the Clear Creek project. Hydrologic and soil processes are discussed in the hydrology and soil reports in the Project File and in the Clear Creek EA (pages 60-66 and 75-79). Timber harvest activities will not increase erosion or alter landslide or mass movement risk (EA, page 77) due to project design, standard operating procedures that incorporate Best Management Practices, and site-specific resource protection measures. The project will reduce fine sediment delivery from forest roads below existing levels (EA, page 62) and have no detrimental effects on water yields (EA, page 64).</p>
61	<p><b>Stahl, Andy. “Reducing the Threat of Catastrophic Wildfire to Central Oregon Communities and the Surrounding Environment.” Testimony before the House Committee on Resources, August 25, 2003</b></p> <p>“In sum, 100 years of fire suppression and logging have created conditions that threaten central Oregon’s natural resources and communities.”</p> <p>“Thus it is inexplicable that the solution proposed by President Bush and some members of Congress emphasizes fire suppression and commercial logging, the very practices that created today’s crisis. The federal government continues to attempt to suppress over 99% of all wildland fires. The Forest Service continues to measure its success not in terms of ecosystems restored, but in fires put out. The President’s Healthy Forest Initiative, as embodied in H.R. 1904, promotes commercial logging at the expense of citizen participation and oversight of the forests we own.”</p> <p><b>Forest Service Response:</b> The cited reference is opinion commentary written over 10 years ago. The Clear Creek project is not being proposed under the authority of the Healthy Forests Restoration Act (H.R. 1904). The emphasis of the Clear Creek project is to restore and maintain ecological resilience. Prescribed fire is an integral component of the project. The project was developed with citizen participation through a collaborative process.</p>

<p>62</p>	<p><b>Strickler, Karyn and Timothy G. Hermach, “Liar, Liar, Forests on Fire: Why Forest Management Exacerbates Loss of Lives and Property” Published by CommonDreams.org, October 31, 2003</b></p> <p>“Fire, just like insects and disease, are a natural and beneficial part of forest ecosystems and watersheds. Without these natural processes the forest ecosystems quickly degrade. Excessive logging removes and reduces cooling shade adding to the hotter, drier forests along with logging debris creating a more flammable forest. Current "forest management" practices, road building and development cause forest fires to rage for hundreds of miles.</p> <p>The Sierra Nevada Ecosystem Project said in a report to the U.S. Congress that timber harvests have increased fire severity more than any other recent human activity. Logging, especially clear cutting, can change the fire climate so that fires start more easily, spread faster, further, and burn hotter causing much more devastation than a fire ignited and burned under natural conditions. If we stop the logging and stop building fire prone developments, we minimize the loss of lives and property suffered by people in fires.</p> <p>As long as the people of America let politicians, timber executives, and the Forest Service get away with it - it will not stop. Those corporations that profit will continue to lie, cheat and steal to continue to make more money from our losses. Just like big tobacco.”</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary written over 10 years ago criticizing the Healthy Forest Restoration Act. The Clear Creek project is not being proposed under the authority of the Healthy Forests Restoration Act (H.R. 1904). Please see responses to #4, 10, 16, 25-26, 31-32, 36, and 48.</p>
<p>63</p>	<p><b>Taxpayers for Common Sense. “From the Ashes: Reducing the Harmful Effects and Rising Costs of Western Wildfires” Washington DC , Dec. 2000</b></p> <p>“The agency’s commercial timber program can contribute to the risk and severity of wildfire in the National Forests, yet Congress devotes nearly one-third of the Forest Service’s entire budget to this wasteful program.” (pg. 1)</p> <p>“Do not utilize the commercial timber program to reduce the risk of fire. Commercial incentives undercut forest health objectives and can actually increase the risk of fire.” (pg. 9)</p> <p>“Commercial logging, especially of larger, fire-resistant trees, in the National Forests is one of several factors contributing to the risk and severity of wildfire.” (pg. 19)</p> <p>“Commercial logging and logging roads open the forest canopy, which can have two effects. First, it allows direct sunlight to reach the forest floor, leading to increased evaporation and drier forests.<sup>5</sup> As a consequence, ground fuels (grass, leaves, needles, twigs, etc.) dry out more quickly and become susceptible to fire. Second, an open canopy allows more sunlight to reach the understory trees, increasing their growth.<sup>6</sup> This can lead to weaker, more densely-packed forests.” (pgs. 19-20)</p> <p>“Congress and the Forest Service continue to rely on the commercial logging program to do something it will never accomplish – reduce fire risk. The commercial logging program is designed to provide trees to private timber companies, not to reduce the risk of fire.” (pg. 20)</p> <p><b>Forest Service Response:</b> The Forest Service could not locate the cited reference; therefore the Agency’s response will be to the quotations provided. The quotations are unsupported opinions. The Clear Creek project will retain the larger, fire-resistant trees (EA, page 51). The EA recognizes that timber harvest may temporarily increase fire hazard but yarding tops during thinning operations and prescribed burning following harvest will reduce surface fuels (EA, page 53). Modeling suggests that following all treatments fire intensity will be reduced under normal summer conditions (EA, page 52).</p>
<p>64</p>	<p><b>Thomas, Craig. “Living with risk: Homeowners face the responsibility and challenge of developing defenses against wildfires.” Sacramento Bee newspaper, July 1, 2007.</b></p>

	<p>“Indiscriminate logging is not a viable solution to reducing wildfire risk. Logging can actually increase fire danger by leaving flammable debris on the forest floor. Loss of tree canopy lets the sun in, encouraging the growth of brush, increases wind speed and air temperature, and decreases the humidity in the forest, making fire conditions even worse.”</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary written in the aftermath of the 2007 Angora fire that destroyed numerous homes near Lake Tahoe. The author suggests that a good fuels management plan focuses on reducing the fuels that ignite and spread wildfire while keeping the large, older trees that are resistant to fire. He cautions against a one-size-fits-all fuels reduction prescription.</p> <p>The definition of “indiscriminate” is haphazard; random; confused; not properly restrained. There is nothing indiscriminate about the vegetation proposals in the Clear Creek project. Site-specific assessments were completed to determine appropriate treatments to achieve desired conditions. The EA recognizes that timber harvest may temporarily increase fire hazard but yarding tops during thinning operations and prescribed burning following harvest will reduce surface fuels (EA, page 53). Modeling suggests that following all treatments fire intensity will be reduced under normal summer conditions (EA, page 52). The larger fire-resistant trees will be retained (EA, page 51).</p>
65	<p><b>University of California; SNEP Science Team and Special Consultants 1996 “Sierra Nevada Ecosystem Project: Final Report to Congress” Volume 1, Chapter 4 – Fire and Fuels.</b></p> <p>“Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity.”(pg.62)</p> <p><b>Forest Service Response:</b> The quote provided by the commenter is from the 1996 “Sierra Nevada Ecosystem Project: Final Report to Congress” Chapter 4 (Fire and Fuels) in a list of “Critical Findings”. The comment was made by the authors specifically in context of the Sierra Nevada Mountain Range. They discuss the finding in the body of the chapter on page 64, describing the historic timber harvests:</p> <p>“Typically, loggers harvested fire-resistant species and large trees, and these were replaced by greater numbers of much more fire-susceptible smaller trees. This pattern of biomass removal contrasted markedly with that of presettlement surface fires, which tended to kill (and later consume) small trees and leave many large trees to survive. Large quantities of debris left after logging led to severe fires, establishing vegetation patterns still evident today.”</p> <p>The historic logging described above and its effects bear little relationship to the Clear Creek project harvest treatments, which would be followed by prescribed burning. The Clear Creek project will retain fire-resistant species and large trees, removing the more fire-susceptible species and smaller trees, much as the presettlement fires mentioned above would have done.</p>
67	<p><b>Vincent, James W. Ph.D., Daniel A. Hagen, Ph.D., Patrick G. Welle Ph.D. and Kole Swanser. 1995. <i>Passive-Use Values of Public Forestlands: A Survey of the Literature. A study conducted on behalf of the U.S. Forest Service.</i></b></p> <p>“The development of sound forest-management policies requires that consideration be given to the economic benefits associated with competing uses of forest resources. The benefits that may be provided under different management regimes include both use values (such as those provided by timber harvesting and recreation) and passive-use (or nonuse) values, including existence value, option value and quasi-option value. Many of these benefits are not revealed in market transactions, and thus cannot be inferred from conventional data on prices and costs.”</p> <p><b>Forest Service Response:</b> The Forest Service directives and Forest Plans provide the framework for current forest management policies. The value of “competing uses” is recognized.</p>
68	<p><b>Voss, René “Getting Burned by Logging,” July 2002 <i>The Baltimore Chronicle</i></b></p> <p>“Unfortunately, there are number of massive logging proposals, disguised as hazardous fuels treatments, that have put environmentalists at odds with the Forest Service. Nearly all of these proposals focus primarily on the removal of mature and old-growth trees. These proposals continue even with overwhelming</p>

	<p>evidence that commercial logging is more of a problem than a solution. There's simply a cognitive disconnect between the Forest Service's scientists and its timber sale planners, whose budgets are dependent upon selling valuable mature trees.</p> <p>Ironically, this very type of logging, experts inform us, is likely to increase, not decrease, the frequency and severity of wildland fires.</p> <p>In the Forest Service's own National Fire Plan, agency scientists warned against the use of commercial logging to address fire management. The report found that 'the removal of large, merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk.'</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary written over 10 years ago in support of the National Forest Protection and Restoration Act, which would eliminate commercial logging on Federal public lands. This bill did not pass into law. Large mature and old growth trees will be retained. Natural and activity-generated slash will be treated.</p>
69	<p><b>Wuerthner, George. "Logging, thinning would not curtail wildfires" <i>The Eugene Register-Guard</i>, December 26, 2008</b></p> <p>"Another surprising finding is that mechanical fuels treatment, commonly known as logging and thinning, typically has little effect on the spread of wildfires. In fact, in some cases, it can increase wildfires' spread and severity by increasing the fine fuels on the ground (slash) and by opening the forest to greater wind and solar penetration, drying fuels faster than in unlogged forests."</p> <p><b>Forest Service Response:</b> The citation is opinion commentary that was written in response to another guest viewpoint printed in an Oregon newspaper. Ample evidence suggests that thinning followed by treatment of the surface fuels can be used to modify fire intensity and severity (please see response to #25). The Clear Creek EA recognizes that timber harvest may temporarily increase fire hazard but yarding tops during thinning operations and prescribed burning following harvest will reduce surface fuels (EA, page 53). Modeling suggests that following all treatments fire intensity will be reduced under normal summer conditions (EA, page 52).</p>
70	<p><b>Wuerthner, George "Who Will Speak For the Forests?" <i>NewWest</i>, January 27, 2009</b></p> <p>"Logging equipment compacts soils. Logging removes biomass critical to future soil productivity of the forest. Logging disturbs sensitive wildlife. Logging typically requires roads and skid trails which create chronic sources of sedimentation that degrades water quality and aquatic organism habitat. Logging roads and skid trails are also a major vector for the spread of weeds. Logging disrupts nutrient cycling and flows. Logging can alter species composition and age structure (i.e. loss of old growth). Logging can alter fire regimes. Logging can change water cycling and water balance in a drainage. The litany of negative impacts is much longer, but suffice it to say that anyone who suggests that logging is a benefit or benign is not doing a full accounting of costs."</p> <p>Those who suggest that logging "benefits" the forest ecosystem are using very narrow definitions of "benefit." Much as some might claim that smoking helps people to lose weight and is a "benefit" of smoking."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary. The Clear Creek EA and resource reports in the Project File describe the potential effects of proposed timber harvest on soils (EA, pages 75-79); wildlife (EA, pages 79-111); water quality, water quantity, and aquatic habitat (EA, pages 60-75), weed establishment and spread (EA, pages 55-57); and fire and fuels (EA, pages 51-54). Project design, best management practices, and resource protection measures will avoid or minimize potential effects. No harvest will occur within old growth and coarse woody debris will be left within treatment units to maintain soil productivity and function. Based on the findings, the Forest Service has determined that the project will not have any significant impacts on the environment (Decision Notice, pages 25-32).</p>
71	<p><b>Ziemer, Robert R. Ph.D., "Effect of logging on subsurface pipeflow and erosion: coastal northern California, USA." <i>Proceedings of the Chengdu Symposium</i>, July 1992. <i>IAHS Publication. No. 209</i>, 1992</b></p> <p>"After logging, peak pipeflow was about 3.7 times greater than before logging."</p>

	<p>"The use of heavy logging equipment was expected to compact the soil, reduce infiltration rates, and increase surface runoff. In addition, heavy equipment might collapse some of the subsurface pipes, increasing local pore water pressure and the chance of landslides (Sidle, 1986)."</p> <p><b>Forest Service Response:</b> The cited article is about a study conducted in coastal northwestern California to determine changes in soil pipeflows after clearcutting. This study appears similar to the one referenced in #33 above. The article states further research is needed to clarify the effect of logging on peak pipeflow and pipe sediment during large storms. This study has little, if any, relevance to the Clear Creek project because no clearcutting will occur. In addition, soil piping is not a concern in the Clear Creek project area. During field review, no sign of soil pipe outlets or collapsed gully features were noted. In addition, several previously harvested units were walked with no evidence of increased landslide or mass movement (Soil report, pg. 16), development of extended gully systems, or karst-like topography observed. The geology in Clear Creek is moderately and weakly weathered metasedimentary with high water holding capacity (Soil report, page 7). These soils are shallow compared to those in the study with no clay influence; project area soils, geology, and climate are also different than those in the study (Soil report, pages 7-9).</p> <p>Heavy logging equipment can compact the soil in-turn reducing infiltration rates, percolation rates, and increasing surface runoff. However, this is not expected in the Clear Creek project because over 93 percent of the harvest units will be skyline yarded and of the less than 7 percent of proposed tractor skidding, work will be completed over frozen ground or using a cut-to-length harvest system working over a slash mat (approximately 40 percent of the ground-based harvest suitable area) (Soil report pages 41-43). The remaining units have soils with high rock fragments, reducing the effects of compaction (Soil report, Tables Soil 2 and 5). Slash and down wood would remain on site providing micro-sites for water capture and storage (EA, page 37: Soil #8). Finally, all units will be fully stocked so root function would be maintained throughout the soil profile.</p>
72	<p>From an April 16, 2002 letter to President Bush asking him to stop all logging in the national forests. <a href="http://www.forestwatch.org/content.php?id=108">http://www.forestwatch.org/content.php?id=108</a>          Note: After the link has been opened, scroll to the bottom and follow the link to "<a href="#">Scientist's No Logging Letter.pdf</a> 64KB" This will show the complete letter and the signatories (221 Ph.D. level scientists).</p> <p><b>Comment:</b> The Responsible Official ignores the statements of 221 unbiased, highly educated biological scientists who point out the common natural resource degradation resulting from commercial timber sales based on the word of a handful of foresters and silviculturists who will gain personally when the timber sale is sold. Clearly, the Responsible Official prefers to let representatives from resource extraction corporations choose the projects on the forest.</p> <p>"As conservation-minded scientists with many years of experience in biological sciences and ecology, we are writing to bring your attention to the need to protect our National Forests. Logging our National Forests has not only degraded increasingly rare and valuable habitat, but also numerous other services such as recreation and clean water."</p> <p>"Unfortunately, the past emphasis of management has been on logging and the original vision for our National Forests has failed to be fully realized. During the past several decades, our National Forests have suffered from intense commercial logging. Today almost all of our old growth forests are gone and the timber industry has turned our National Forests into a patchwork of clearcuts, logging roads, and devastated habitat."</p> <p>"It is now widely recognized that commercial logging has damaged ecosystem health, clean water, and recreational opportunities-- values that are highly appreciated by the American public. The continued logging of our National Forests also wastes American tax dollars and diminishes the possibilities of future economic benefits. The Forest Service and independent economists have estimated that timber accounts for only 2.7 percent of the total values of goods and services derived from the National Forests, while recreation and fish and wildlife produce 84.6 percent."</p> <p><b>Forest Service Response:</b> The cited letter is opinion commentary. The Clear Creek project emphasizes maintaining and restoring ecosystem resilience. The project does not include timber harvest in old growth or clearcutting. The EA and supporting documentation in the Project File demonstrates that the project will improve water quality, stream function, and aquatic habitat over the long-term (EA, pages 60-75); will maintain soil productivity (EA, pages 75-79); and will not adversely affect wildlife species (EA, pages 79-111).</p>
73	<p><b>Partridge, Arthur Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests</b></p>

	<p><b>April 28, 1998, U.S. Capitol</b></p> <p>“Recently, so called "salvage" logging has increased on national forests in response to a timber industry invented "forest health crisis" which points the finger at normal forest processes of fire, fungi, bacteria, insects and other diseases. In fact the crisis in the national forests is habitat destruction caused by too much clearcutting.</p> <p>My long-term studies of forest diseases in Idaho show the loss by disease and insect activity in all age classes of forests to be less than or slightly more than 1 percent per year over the past thirty-eight years. These findings are consistent with Forest Service national level data.</p> <p>Forests are structured systems of many life forms interacting in intricate ways and disturbances are essential to their functioning. It's not fire disease fungi bacteria and insects that are threatening the well being of forests. Disease, fire, windthrow, and other disturbances are a natural part of the forest ecosystem and assist in dynamic processes such as succession that are essential to long term ecosystem maintenance. The real threat facing forests are excessive logging, clearcutting and roadbuilding that homogenize and destroy soil, watersheds and biodiversity of native forests.”</p> <p><b>Forest Service Response:</b> The cited letter is opinion commentary in support of the Act to Save America's Forests, which did not pass into law. The Clear Creek project does not include salvage or clearcutting. Please also see response to #52 above.</p>
74	<p><b>Elliot, W.J.; Page-Dumroese, D.; Robichaud, P.R. 1999. <i>The effects of forest management on erosion and soil productivity</i>. Proceedings of the Symposium on Soil Quality and Erosion Interaction, Keystone, CO, July 7, 1996. Ankeney, IA: Soil and Water Conservation Society. 16 p.</b></p> <p>“In our overview of the impacts of forest management activities on soil erosion and productivity, we show that erosion alone is seldom the cause of greatly reduced site productivity. However, erosion, in combination with other site factors, works to degrade productivity on the scale of decades and centuries. Extreme disturbances, such as wildfire or tractor logging, cause the loss of nutrients, mycorrhizae, and organic matter. These combined losses reduce long-term site productivity and may lead to sustained periods of extended erosion that could exacerbate degradation.</p> <p>Managers should be concerned with harvesting impacts, site preparation disturbances, amount of tree that is removed, and the accumulation of fuel from fire suppression. On erosion-sensitive sites, we need to carefully evaluate such management factors.”</p> <p><b>Forest Service Response:</b> The potential effects to soil are disclosed in the Clear Creek EA (pages 75-79) and the soil report in the Project File. The Clear Creek project will maintain soil productivity and comply with Region 1 soil quality standards as well as other pertinent laws and regulations (EA, page 75 and 78-79). Project design, resource protection measures (EA, pages 37-41), and best management practices will minimize soil disturbance and ensure that productivity is maintained. No new erosion is expected from harvest treatment areas because standard operating procedures and site-specific resource protection measures will minimize operational footprints and maintain the forest floor, ground cover, and soil organic matter (EA, page 77).</p>

<b>Artley Attachment 3: Literature Review and Response</b>	
	<p>The following were presented as opposing viewpoints to fuels reduction. The claim is that harvesting trees to reduce fuels is not only ineffective at reducing the risk of fire damage to human structures but harms the forest ecosystem.</p> <p><b>Forest Service Response:</b> The purpose and need for the Clear Creek project does not include reducing the risk of fire damage to human structures (see EA, pages 11-15). Fuels reduction in the Clear Creek project is within the context of restoring the structure and composition of the dry ponderosa pine and Douglas-fir forest types so that resulting stands are more resilient to insects, disease, drought, and wildfire. The fuel reduction aspect of the treatments is to increase the likelihood that future fires will remain on the ground and burn at a low to mixed severity within treated areas, which is more characteristic of historic conditions. Resulting stand structures and compositions will also reduce susceptibility to bark beetles. The project will use a combination of prescribed burning and mechanical treatments to achieve desired objectives. The Clear Creek Environmental Assessment (EA) and resource reports in the project file disclose the effectiveness and potential environmental effects of prescribed treatments. Fuel modeling indicates prescribed treatments will effectively modify fire behavior and reduce the intensity of a potential wildfire under normal summer conditions (EA, pages 52-53).</p> <p>Twenty-three of the citations provided by the commenter under this heading are duplicates of the literature cited for the commenter's "opposing viewpoints to timber harvest". The Forest Service's Responses to 2, 6, 13, 14, 16, 17, 20-22, 24, 25, 27-29, 32, 40, 42, 44-47, 49, and 53 are included in the Literature Review and Response for Opposing Viewpoints to Timber Harvest. The cited literature is comprised of both science-based articles and general commentary and opinions contained within newspaper and magazine articles, Internet websites and blogs regarding fire and fuels management. The Forest Service has reviewed each citation and the quotations supplied by the commenter. The Agency's responses are provided below.</p>
1	<p><b>Agee, James K. Ph.D. "The Severe Weather Wildfire-Too Hot to Handle? <i>Northwest Science</i>, Vol. 71, No. 1, 1997</b></p> <p>"large, severe wildfires are more weather-dependent than fuel-dependent,"</p> <p><b>Forest Service Response:</b> The above quotation was taken out of context. The author says that this statement identified in the provided quotation should not be generalized to all forest types. Fire behavior is a function of fuel, weather, and topography. The author suggests that weather is likely the most influential factor in fire behavior for subalpine forests and moist coastal forests of Douglas-fir and western hemlock which are historically characterized by a high-severity fire regime. However, the author suggests that for the mixed conifer forests with a variety of dry-site conifers present, such as what is identified for treatment Clear Creek project, fuel is likely the most influential factor in fire behavior.</p>
3	<p><b>Berry, Alison Ph.D., 2007. "Forest Policy Up in Smoke: Fire Suppression in the United States." A PERC publication.</b></p> <p>"One reason that fuels reduction treatments should be limited is that they may not address the important effects of climate and weather on fire behavior. Some studies suggest that it is drought and warmer temperatures—not fuels accumulations—that are the major explanatory factors for large fires (O'Toole 2002-2003, Pierce et al. 2004). It is an unrealistic goal to return all forests to historical states, in light of the fact that agencies have no control over drought or temperature." (pgs. 15–16)</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary about fire suppression policies on the federal lands and recommends changes in funding for suppression efforts to curb spending. The author also recommends that efforts should be focused on fuels reduction and restoring fire-adapted ecosystems, as appropriate for local conditions (page 19). The Clear Creek vegetation treatments are within warm, dry forest types characteristic of low to mixed severity fire regimes. However, field surveys indicate that tree densities and species composition are outside their historical range (EA, pages 48-51). A combination of prescribed burning and mechanical treatments is prescribed to restore stand structures and compositions more likely to support low and mixed severity wildfire so the landscape as a whole can experience the full spectrum of wildfire intensities as it did in the past. These stand structures and compositions also reduce susceptibility to bark beetles.</p> <p>It is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Jain</p>

	<p>and Graham 2004; Graham et al. 2004). Any particular wildfire's growth and behavior are unique because of the infinite combinations of these factors that can occur over spatial and temporal scales (Graham et al. 2004). Of these three factors, the only thing humans can alter through management is fuel.</p>
<p>4</p>	<p><b>Bessie, W. C. Ph.D. and E. A. Johnson Ph.D. "The Relative Importance of Fuels and Weather on Fire Behavior in Subalpine Forests" <i>Ecology</i>, Vol. 76, No. 3 (Apr., 1995) pp. 747-762. Published by: Ecological Society of America</b></p> <p>"Fire intensity was correlated to annual area burned; large area burned years had higher fire intensity predictions than smaller area burned years. The reason for this difference was attributed directly to the weather variable frequency distribution, which was shifted towards more extreme values in years in which large areas burned. During extreme weather conditions, the relative importance of fuels diminishes since all stands achieve the threshold required to permit crown fire development. This is important since most of the area burned in subalpine forests has historically occurred during very extreme weather (i.e., drought coupled to high winds). The fire behavior relationships predicted in the models support the concept that forest fire behavior is determined primarily by weather variation among years rather than fuel variation associated with stand age."</p> <p><b>Forest Service Response:</b> The cited article suggests that weather is the primary factor affecting wildfire size in subalpine forests near the boreal forest ecotone in Alberta, Canada. The title of the article clearly states that it focuses on subalpine forests. The Clear Creek project vegetation treatments are located within an entirely different forest type of dry ponderosa pine and Douglas-fir.</p> <p>In the article listed in #1 above, James Agee says that people cite the Bessie and Johnson paper as evidence for what he calls the "weather hypothesis" (all large, severe wildfires are more weather-dependent than fuel-dependent). However, Agee points out that the Bessie and Johnson paper is specific to subalpine forests. He indicates that evidence from studies in other areas suggest that the weather hypothesis should not be generalized to all forest types. See response to #1 above.</p>
<p>5</p>	<p><b>Bird, Bryan "Fires Normal Part of Ecology - Fear of fires ungrounded" <i>Mountain View Telegraph</i>, December 20, 2007</b></p> <p>"Climatic conditions drive all big fires— not fuels. All substantial fires occur only if there is extended drought, low humidity, high temperatures and, most importantly, high winds. When conditions are "ripe" for a large blaze, fires will burn through all kinds of fuel loads. For this reason, most fires go out without burning more than a few acres; approximately 1 percent of all fires are responsible for about 95 percent to 99 percent of the acreage burned."</p> <p>"Under severe conditions, fires burn through all kinds of fuel loads including thinned/logged forests. Contrary to what the U.S. Forest Service has stated about the Ojo Peak Fire, local witnesses have said the fire blew right through the hotter, drier thinned forests where the cooling effect of forest canopy had been removed."</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary published in a newspaper in response to another person's previously published viewpoint. In the cited article, the author opposes the construction of a biomass plant near Estancia, New Mexico and criticizes the previous commenter's statements regarding wildfire risk. The articles themselves are irrelevant to the Clear Creek project in Montana.</p> <p>In response to the provided quotation above, it is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Jain and Graham 2004; Graham et al. 2004). Any particular wildfire's growth and behavior are unique because of the infinite combinations of these factors that can occur over spatial and temporal scales (Graham et al. 2004). Of these three factors, the only thing humans can alter through management is fuel. "Severe" or extreme weather conditions can create fire behavior that would burn through or breach most fuel treatments. Thus, realistic objectives for fuel treatments include reducing the likelihood of crown fire and other fire behavior that would lead to undesirable future conditions.</p>
<p>7</p>	<p><b>Coe, Nathan J. "Forestry shouldn't be an 'industry' " <i>Durango Herald</i>, February 12, 2011</b></p> <p>"As someone with first-hand experience in fire hazard reduction and first-hand knowledge of the forest management field, as well as someone with lifelong roots in the Durango community, I am abhorred by the destruction, nearly amounting to clear cutting, that is taking place around our community under the guise of "fire hazard reduction."</p>

	<p><b>Forest Service Response:</b> The cited article is opinion commentary published in a Colorado newspaper criticizing what appears to be ongoing timber harvest near Durango, Colorado for the purpose of fuels reduction. This article is irrelevant to the Clear Creek project in Montana. Clearcutting is not included in the Clear Creek project. A combination of prescribed burning and mechanical treatments is prescribed to restore stand structures and compositions more likely to support low and mixed severity wildfire.</p>
8	<p><b>Forest Policy Research paper 2008 “Montana: Blackfoot Clearwater Stewardship Proposal is all about selling out to Pyramid lumber”</b></p> <p>“First, most large fires are climatic/weather driven events, not fuels driven. Extended drought, high winds, high temperatures and low humidity enable fires to burn through all fuel loadings. Many of the large Western fires in recent years were in forests that had been previously logged and/or thinned, with little apparent effect on fire spread or severity.”</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary that questions the effectiveness of thinning to reduce fire hazard. Please see responses to #1, 3, 4, 5, and 9. Fuel modeling suggests the reduction of surface and ladder fuels along with the separation of tree crowns prescribed in the Clear Creek vegetation treatments will decrease the risk of high severity crown fire (EA, pages 50-53).</p>
9	<p><b>Forest Policy Research paper 2008 “California: Too often thinning treatments tend to increase fire hazards”</b></p> <p>“most large fires are climatic/weather driven events, not fuels driven. Extended drought, high winds, high temperatures and low humidity enable fires to burn through all fuel loadings.”</p> <p><b>Forest Service Response:</b> The provided quotation is not contained within the cited article. This article cites a study that suggests that mechanical thinning followed by prescribed fire to reduce surface fuels is effective in creating stands that are more resistant to severe fire effects. The article emphasizes the importance of treating surface fuels with prescribed fire following thinning activities to reduce future fire severity and spread. The Forest Service agrees. The Clear Creek project includes thinning from below followed by prescribed burning to reduce surface fuels.</p>
10	<p><b>Frey, David “Logging Won’t Halt Beetles, Fire, Report Says” <i>NewWest.net</i>, 3-03-10</b></p> <p>“The primary driver of fire is not beetle kill. It’s climate,” said Barry Noon, a wildlife ecology professor at Colorado State University and an author of the report. “It’s drought and temperature.”</p> <p>“The report was authored by Noon; Clark University professor Dominik Kulakowski ; Scott Black, executive director of the Xerces Center for Invertebrate Conservation and Dominick DellaSala, president and chief scientist for the National Center for Conservation Science and Policy.”</p> <p><b>Forest Service Response:</b> This article cites a report entitled, “Insects and Roadless Forests: A Scientific Review of Causes, Consequences, and Management Alternatives” issued by a conservation group that specifically addresses a proposal to exempt National Forest roadless areas in Colorado from protections under the 2001 Roadless Area Conservation Rule. The authors suggest that mechanical treatments in roadless areas will not likely reduce forest susceptibility to beetle outbreaks or reduce the risk of fires, especially the risk of fires to communities. The Clear Creek project does not include salvage of dead and dying trees, nor does it include timber harvest or road construction in roadless areas. Please also see responses to 1, 3, 4, 5, and 8.</p>
11	<p><b>Gable, Eryn “Battling beetles may not reduce fire risks – report” <i>The Xerces Society Land Letter</i>, March 4, 2010</b></p> <p>“Extensive areas of dead trees have understandably led to widespread concern about the increased risk for forest fires,” said Dominik Kulakowski, one of the report’s authors and a professor of geography and biology at Clark University in Worcester, Mass. “This is a logical concern, but the best available science indicates that the occurrence of large fires in lodgepole pine and spruce-fir forests is mainly influenced by climatic conditions, particularly drought.”</p> <p><b>Forest Service Response:</b> This article cites the same report as does the article in #10 above – please see above response. The article is not applicable to the Clear Creek project. Clear Creek vegetative treatments are proposed in dry ponderosa pine and Douglas-fir forest types, not the lodgepole pine and spruce-fir</p>

	forest types discussed in the cited report and identified in the supplied quotation.
12	<p><b>Gorte, Ross W. Ph.D. “Wildfire Damages to Homes and Resources: Understanding Causes and Reducing Losses” A CRS report for Congress, June 2, 2008</b></p> <p>“Reducing burnable biomass, however, does not eliminate wildfires, because fuel reduction does not directly alter the dryness of the biomass or the probability of an ignition.”</p> <p><b>Forest Service Response:</b> The cited article is a report prepared for Congress that provides an overview of the nature of wildfires followed by a discussion of the options for protecting structures, wildlands, and natural resources from wildfires. Some of the options discussed include those prescribed in the Clear Creek project (e.g. thinning and prescribed burning). In response to the quotation provided, elimination of wildfire is not an objective. At the beginning of the paragraph where this quotation is found, the author states that the principal goal for land and resource protection is <i>to reduce the damages caused by wildfire</i>, which he says can be best achieved by reducing burnable biomass.</p>
15	<p><b>Hermach, Tim. “The Skinny on Thinning, Should we save the forest from itself?” Published by the Eugene Weekly Viewpoint, 11/1/07</b></p> <p>“Emerging science demonstrates that the real culprit for creating more wildfires — including southern California's blazes — is not "fuels" but climate and weather. Climate change simply means we must learn to live with more wildfires.</p> <p>Humankind can be pretty smart (we made it to the Moon), but we can also be pretty stupid (we're destroying the lungs of the planet for profit). One thing, however, is certain: Mother Nature knows best. So let's be responsible and stop logging the publicly owned forests, let them recover and let God and nature back in.”</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary written by the executive director of the Native Forest Council in opposition to fuels reduction treatments that involve commercial tree removal. Please see responses to #1, 3, 4, 5, and 8.</p>
18	<p><b>Ingalsbee, Timothy Ph.D. 2000. “Money to Burn: The Economics of Fire and Fuels Management, Part One: Fire Suppression”. An American Lands Alliance publication.</b></p> <p>"Problems exist with over-generalizing the effects of fire exclusion, and misapplying data derived from short-interval forest ecosystems (e.g. ponderosa pine stands) to long-interval forest ecosystems that have not missed their fire cycles yet and are still within their historic range of variability for stand-replacing fire events (e.g. high elevation lodgepole pine or fir stands)."</p> <p><b>Forest Service Response:</b> The provided quotation is not found within the cited article. It instead comes from another of Mr. Ingalsbee's articles, entitled, “Ecological Assessments Should Be Required Prior to Fuels Reduction or Restoration Projects”. In the next sentence the author writes, “Fire/fuels management prescriptions should reflect current conditions, and there should be no treatments without prior collection of site-specific field data.” The Clear Creek project is consistent with the author’s recommendations. Site-specific assessments have been completed for each treatment area. Silvicultural prescriptions have been tailored to address the existing conditions to meet site-specific objectives. The Clear Creek project addresses the restoration needs in the dry ponderosa pine and Douglas-fir forest types on the north side of Clear Creek. The author also suggests that fuels reduction should be recognized as a means of attaining the goals of ecosystem restoration and protection. The Clear Creek project is consistent with this assessment as it uses fuels reduction actions to restore forest stand resilience (see EA, Appendices D and E).</p>
19	<p><b>Ingalsbee, Timothy Ph.D., “National Fire Plan Implementation: Forest Service Failing to Protect Forests and Communities” American Lands Alliance, March 2002</b></p> <p>“Congress should prohibit the use of commercial timber sales and stewardship contracts for hazardous fuels reduction projects. Commercial logging removes the most ecologically valuable, most fire-resistant trees, while leaving behind highly flammable small trees, brush, and logging debris. The use of "goods for services" stewardship contracts also encourages logging larger, more fire-resistant trees in order to make such projects attractive to timber purchasers. The</p>

	<p>results of such logging are to increase fire risks and fuel hazards, not to reduce them. The financial incentives for abusive logging under the guise of "thinning" must be eliminated."</p> <p><b>Forest Service Response:</b> The cited article is 12 year old opinion commentary that suggests Congress and the Forest Service adopt the author's fire policy recommendations. Modifying national policies is outside the scope of the Clear Creek project. However, the Clear Creek vegetation treatments will retain the largest, most fire-resistant trees as well as the fire-resistant species (EA, page 51). Natural and activity-generated fuels will be treated through prescribed burning.</p>
23	<p><b>Ingalsbee, Timothy Ph.D. and Joseph Fox, Ph.D. "Firefighters United for Safety, Ethics, and Ecology (FUSEE): Torchbearers for a New Fire Management Paradigm" A poster presentation at the Third International Fire Ecology and Management Congress, Association for Fire Ecology November 13-17, 2006</b></p> <p>"For example, use of taxpayer dollars and resources on deficit timber sales that remove fire-resilient old-growth trees and leave behind untreated logging slash, violate federal environmental laws in planning or implementation, or are deceptively labeled as "fuels reduction" or "forest restoration" projects when they actually increase fuel hazards or degrade ecological integrity, is an ethical as well as an ecological issue. These kind of anti-ecological, unethical forest management projects also adversely affect firefighter and community safety by diverting limited federal dollars away from genuine hazardous fuels reduction activities, and by degrading ecological conditions in ways that increase wildfire rate of spread, intensity, or severity."</p> <p><b>Forest Service Response:</b> The cited article provides an overview of the FUSEE organization and its mission. The Clear Creek project will not harvest old growth trees. Large, fire-resistant trees will be retained. Activity generated slash will be treated by prescribed burning.</p>
26	<p><b>Kelly, Steve Ph.D. 2007. "Cheap Chips, Counterfeit Wilderness: Greenwashing Logging on Montana's Biggest National Forest." Published by the World Prout Assembly</b></p> <p>"There is a gathering body of evidence that large wildfires are not determined by "unnatural" fuel loading. Lodgepole pine, subalpine fir, and aspen depend on infrequent, stand-replacing, high intensity fires. Most of the B-D NF is well within the natural range of variability. In fact, dense forest stands may not be caused by fire exclusion, but by a series of consecutive wet years that boosted seedling survival and expanded the local range.</p> <p>Drought, wind, and low humidity, not fuels loads, drive large wildfires. Weather and climatic conditions are also the driving force behind expanding insect populations."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary criticizing the then proposed Beaverhead-Deerlodge Conservation, Restoration and Stewardship Act of 2007. This bill did not pass into law and has no relevance to the Clear Creek project on the Lolo National Forest. The Clear Creek vegetation treatments are located within dry ponderosa pine and Douglas-fir forest types that typically experienced low to mixed severity fires on a moderately frequent basis. This is a very different forest type than the subalpine forest described in the quotation. Please see responses to #1, 3, 4, 5, and 8.</p>
30	<p><b>"More Large Forest Fires Linked To Climate Change" Adapted from materials provided by the University of Arizona ScienceDaily, July 10, 2006</b></p> <p>"Almost seven times more forested federal land burned during the 1987-2003 period than during the prior 17 years. In addition, large fires occurred about four times more often during the latter period."</p> <p>"The increases in fire extent and frequency are strongly linked to higher March-through-August temperatures and are most pronounced for mid-elevation forests in the northern Rocky Mountains.</p> <p>The new finding points to climate change, not fire suppression policies and forest fuel accumulation, as the primary driver of recent increases in large forest fires."</p> <p><b>Forest Service Response:</b> The article is a brief summary of a 2006 publication entitled "Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity" written by Westerling et al. In their study, the authors compiled a database of large wildfires in the western United States forests since 1970 and compared</p>

	<p>it with hydro-climatic and land-surface data. Their study indicates that large wildfire activity increased markedly in the mid-1980s, with higher large-wildfire frequency, longer wildfire durations, which they suggest is strongly associated with increased spring and summer temperatures and an earlier spring snowmelt. The authors do not discount the effect of fuels: "In some forest types, past land uses [including fire suppression] have probably increased sensitivity of current forest wildfire regimes to climatic variability through effects on the quantity, arrangement, and continuity of fuels." They further state, "The overall importance of climate in wildfire activity underscores the urgency of ecological restoration and fuels management to reduce wildfire hazards to human communities and to mitigate ecological impacts of climate change in forests that have undergone substantial alterations due to past land uses."</p> <p>As described in the Clear Creek EA, field surveys indicate the warm, dry forest types have higher tree densities than historic conditions and a lower quantity and proportion of fire-resistant tree species likely due to selective timber harvest in the 1950s and 1960s and insect-induced mortality in the ponderosa pine (EA, page 48). The Clear Creek project will use a combination of prescribed burning and mechanical treatments to lower stand densities and favor fire and disease-resistant tree species. These treatments will increase the likelihood of supporting low and mixed-severity wildfires and decrease the likelihood of supporting high-severity wildfires by reducing crown continuity to limit crown fire spread, reducing understory and mid-story conifers that act as ladder fuels capable of carrying surface fires into the crowns, and reducing ground fuel accumulations to reduce the heat intensity on the tree boles and roots (EA, pages 50-53). Resulting stand structures and compositions will also reduce susceptibility to bark beetles.</p>
31	<p><b>Morgan, Penelope Ph.D., Emily K. Heyerdahl Ph.D., and Carly E. Gibson 2008 "Multi-season climate synchronized forest fires throughout the 20th century, Northern Rockies", <i>Ecology</i>, 89, 3: 717-728.</b></p> <p>"We inferred climate drivers of 20th-century years with regionally synchronous forest fires in the U.S. northern Rockies. We derived annual fire extent from an existing fire atlas that includes 5038 fire polygons recorded from 12070086 ha, or 71% of the forested land in Idaho and Montana west of the Continental Divide. The 11 regional-fire years, those exceeding the 90th percentile in annual fire extent from 1900 to 2003 (&gt;102314 ha or ~1% of the fire atlas recording area), were concentrated early and late in the century (six from 1900 to 1934 and five from 1988 to 2003). During both periods, regional-fire years were ones when warm springs were followed by warm, dry summers and also when the Pacific Decadal Oscillation (PDO) was positive. Spring snowpack was likely reduced during warm springs and when PDO was positive, resulting in longer fire seasons. Regional-fire years did not vary with El Nino-Southern Oscillation (ENSO) or with climate in antecedent years. The long mid-20th century period lacking regional-fire years (1935-1987) had generally cool springs, generally negative PDO, and a lack of extremely dry summers; also, this was a period of active fire suppression. The climate drivers of regionally synchronous fire that we inferred are congruent with those of previous centuries in this region, suggesting a strong influence of spring and summer climate on fire activity throughout the 20th century despite major land-use change and fire suppression efforts. The relatively cool, moist climate during the mid-century gap in regional-fire years likely contributed to the success of fire suppression during that period. In every regional-fire year, fires burned across a range of vegetation types. Given our results and the projections for warmer springs and continued warm, dry summers, forests of the U.S. northern Rockies are likely to experience synchronous, large fires in the future."</p> <p><b>Forest Service Response:</b> The citation is a research study conducted in Idaho and western Montana to compare fire scars to tree ring reconstructions of climate. The results suggest that regional fire years occurred when spring-summer were significantly warm and summers were significantly warm-dry, Years when fire was recorded at only a few of the study sites appear to have occurred under a broad range of climate conditions.</p> <p>It is unclear what the commenter's point was in including this citation as it contains no discussion of land management actions. It has long been established that weather is a principal factor in fire behavior.</p>
33	<p><b>Oregon State University Research Science Centric, July 9, 2009</b></p> <p>"Fuel reduction treatments should be forgone if forest ecosystems are to provide maximal amelioration of atmospheric carbon dioxide over the next 100 years,' the study authors wrote in their conclusion. 'If fuel reduction treatments are effective in reducing fire severities in the western hemlock, Douglas-fir forests of the west Cascades and the western hemlock, Sitka spruce forests of the Coast Range, it will come at the cost of long-term carbon storage, even if harvested materials are used as biofuels.' "</p>

	<p><b>Forest Service Response:</b> The cited article is a review of a published study entitled "Forest Fuel Reduction Alters Fire Severity and Long-term Carbon Storage in Three Pacific Northwest Ecosystems" written by Stephen Mitchel, Mark Harmon and Kari O'Connell. The authors of the study used a forest ecosystem simulation model to examine the effects of fuel reduction on fire severity and the resulting long-term carbon storage among three Pacific Northwest ecosystems: the east Cascades ponderosa pine forests, the west Cascades western hemlock-Douglas-fir forests, and the Coast range western hemlock-Sitka spruce forests. Their results suggest that if fuel reduction treatments are effective in reducing fire severities in the western hemlock-Douglas-fir forest of the west Cascades and western hemlock-Sitka spruce forests of the Coast Range, it will come at the cost of long-term carbon storage even if harvested materials are utilized as biofuels. However, they suggest that the application of fuel reduction treatments may be essential for ecosystem restoration in forests with uncharacteristic levels in the ponderosa pine forest ecosystems of the east Cascades. The Clear Creek vegetation treatments will be conducted in dry forest types where stand densities are high, which is similar to the ponderosa pine forest types of the east Cascades described in the study.</p>
34	<p><b>O'Toole Randal. "Incentives, Not Fuels, Are the Problem" Published by the Thoreau Institute</b></p> <p>"While top officials blame recent fires on fuels, all the on-the-ground reports I've read focus on the weather."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary that claims that the Forest Service exaggerates wildfire and forest fuels concerns to leverage Congress for a bigger budget. The author also claims the reason for increased fire suppression and fuel reduction costs is due to Congress providing the Forest Service a 'blank check', which he suggests offers no incentive to control costs. How Congress funds the Forest Service is outside the scope of the Clear Creek project.</p> <p>In the sentence following the provided quotation, the author writes, "I am not saying there is no buildup of fuels, just that the buildup isn't as important as the popular story has led us to believe." It is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Jain and Graham 2004; Graham et al. 2004). Of those three factors, the only thing humans can alter through management is fuel. Please also see response to #3.</p>
35	<p><b>O'Toole, Randal. 2002. "Reforming the Fire Service: An Analysis of Federal Fire Budgets and Incentives." The Thoreau Institute.</b></p> <p>"This paper will show that built-up fuels are <i>not</i> the main reason, or even a major reason, for recent severe fires or high fire suppression costs. The weather is the prime reason for widespread fires this year as well as in 2000, 1999, and other recent years. But the major reason for increased costs is institutional: The federal land agencies, and especially the Forest Service, have a blank check to put out fires and thus have no reason to control their costs. If fuels are not the problem, then it isn't necessary to spend \$400 million a year treating them."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary that is a longer version of the article cited in #34 above. Please see response to #34.</p>
36	<p><b>O'Toole, Randal. "Money to Burn?" Regulation, Winter 2002 - 2003</b></p> <p>"Post-fire reports on individual fires make little or no mention of excess fuels. Instead, fire scientists agree that drought is the cause of the severe fires in recent years. This year's Rodeo- Chedisky Fire, the largest fire in Arizona history, was on heavily managed and thinned federal lands, not an untouched wilderness brimming with excess fuels."</p> <p><b>Forest Service Response:</b> The cited article is opinion commentary that is essentially the same as what is contained in the articles of #34 and 35 above. Please see response to #34.</p>
37	<p><b>Partridge, Arthur Dean Ph.D. Testimony to the Agriculture, Nutrition and Forestry Committee United State Senate. Hearing to Review Healthy Forests Restoration Act, HR 1904 June 26, 2003</b></p> <p>"The current focus on 'fuels' is, in itself, misguided because almost anything in a forest will burn, given the right conditions. Any fire specialist will tell you that the principal factors affecting fire are temperature and moisture, not fuels. No legislation will prevent or even reduce fires in the vast areas of the national forests and to pretend so is fraudulent."</p>

	<p><b>Forest Service Response:</b> The cited article is testimony submitted in opposition to the Healthy Forests Restoration Act. The Clear Creek project is not proposed under this legislation. Please see responses to #1, 3, 4, 5, and 8. The Clear Creek vegetation treatments are not intended to prevent or reduce fires, but instead to modify fire behavior to reduce the likelihood of high severity crown fires in treated areas through the restoration of forest structure and composition in the dry ponderosa pine and Douglas-fir forest types.</p>
38	<p><b>Peters, R.L., E. Frost, and F. Pace. "Managing for forest ecosystem health: A reassessment of the forest health crisis." <i>Defenders of Wildlife</i>. April 1996.</b></p> <p>"A number of studies have shown that for some ecosystems, the major factor determining fire intensity and size is weather and not the amount of fuel (Baker 1989, Flannigan and Harrington 1988, Haines and Sando 1969, Rothermel 1995). For example, Bessie and Johnson (1995) found that fire spread and intensity were strongly related to weather conditions and only weakly related to fuel loads in the southern Canadian Rockies. Similarly, many hundreds of the thousands of acres of forests that were intensely burned in the 1994 Tye Fire on the Wenatchee National Forest had very low fuel loads. The Forest Service and Fish and Wildlife Service concluded that weather patterns and terrain -- not fuels -- were the major reasons why this large fire burned the way it did (U.S. Forest Service 1995, U.S. Fish &amp; Wildlife Service 1994). Such case studies provide little evidence that salvage logging of dead and dying trees will significantly reduce wildfires."</p> <p><b>Forest Service Response:</b> The Forest Service was unable to access the cited reference, thus the response is to the provided quotation. Please see responses to #1, 3, 4, 5, 8, 9, 18, 26, and 30. The Clear Creek project will not salvage dead and dying trees.</p>
39	<p><b>Peterson, Mike testimony to the Senate Agriculture, Nutrition, and Forestry Committee concerning the Healthy Forests Restoration Act, HR 1904. June 26 2003</b></p> <p>"H.R 1904 does not include any specific measures to protect homes or communities. It is also inconsistent with the Western Governors' Association 10-Year Comprehensive Strategy, which does not call for any changes in existing laws. The only proven method to protect homes and communities is to reduce flammable materials in the immediate vicinity of structures, yet the definitions in H.R. 1904 would not require any activities to be near homes. Instead, the bill seeks to further subsidize the timber industry and eliminate obstacles to logging large, fire-resistant trees miles away from the nearest home. The country's top forest scientists, including the Forest Service's own scientists, have found that this kind of logging can actually increase fire risk and make fires larger and more intense."</p> <p><b>Forest Service Response:</b> The cited testimony is opinion commentary opposing the Healthy Forests Restoration Act as written for various reasons. This article is not relevant to the Clear Creek project because the project is not proposed under this legislation. Protecting homes and communities is not the purpose of the Clear Creek project vegetation treatments. Instead the treatments are focused on restoring the resilience of the dry forest types in the Clear Creek drainage and improving big game winter range. Large fire-resistant trees will be retained (EA, page 43).</p>
41	<p><b>Power, Thomas Ph.D. "The Politics of Forest Fires -- The Abuse of Other People's Hard Times." 8/15/2000</b></p> <p>"While most of us have suffered with the unavoidable fire-related anxieties, we have also been impressed by the hard work and heroism of both neighbors and anonymous firefighters. But others have tried to profit from the fires and the primordial fears they evoke. The forest products industry has been in the lead in this exploitation of other people's hardtimes.</p> <p>The forest products industry wants access as cheaply as it can get it to as much wood fiber as possible. It once had privileged access to forested public lands. As the frontier economy has faded and government give-aways have fallen out of political favor, the forest products industry's privileged grip on public resources has begun to slip. The current forest fires offer them an opportunity to try to regain some of their lost clout.</p> <p>The fires, timber industry spokespersons claim, are the result of restrictions on commercial logging on public lands. If all of these lands had been logged, they assert, the fires would not be burning. It is the federal government and the environmentalists they are in cahoots with who have caused the fires that now threaten us. As one timber industry advocate baldly said, "I never saw a clearcut burn."</p>

	<p>Nothing could be further from the truth. Of course clearcuts burn. When long, hot summers dry out the grasses, brush, and logging wastes, they can flare explosively. When they grow thick with closely packed young trees, they present exactly the fire danger we are wrestling with now. The logging roads provide human access that is the source of the vast majority of forest fires.</p> <p>If roading and logging eliminated the threat of wildfire, most of the fires that threaten us now would not be burning. Look at where these fires are: They are largely burning on the forest-urban interface in areas adjacent to intense human activity. In Western Montana, for instance, the fires are burning in the forests adjacent to some of the rapidly growing residential areas in the nation, the Bitterroot, Helena, and Clark Fork Valleys. These are not roadless areas that have never been logged. Quite the contrary, they are areas that were roaded and logged in the past. Those roads often have then provided access for the human activity that now dominates these areas, including the home building, residential settlement of the last two decades, and recreational activity. The trees now burning are usually second growth that followed past logging.”</p> <p><b>Forest Service Response:</b> The cited article is 14-year old opinion commentary. The objective of the Clear Creek vegetation treatments is not to eliminate the threat of wildfire. Treatments are intended to restore forest structure and composition in the dry ponderosa pine and Douglas-fir forest types to improve forest stand resilience. As part of the restoration focus, treatments will modify fire behavior to increase the likelihood that future fires will remain on the ground and burn at a low to mixed severity, which is more characteristic of historic conditions. Resulting stand structures and compositions will also reduce susceptibility to bark beetles.</p>
43	<p><b>Schoennagel, Tania Ph.D., Thomas T. Veblen Ph.D., and William H. Rommie Ph.D. “The Interaction of Fire, Fuels, and Climate across Rocky Mountain Forests”</b></p> <p>“No evidence suggests that spruce–fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests (Romme and Despain 1989, Bessie and Johnson 1995, Nash and Johnson 1996, Rollins et al. 2002). We conclude that large, infrequent standreplacing fires are “business as usual” in this forest type, not an artifact of fire suppression.” (Pg. 666)</p> <p>“Variation in daily area burned was highly correlated with the moisture content of 100-hour (2.5- to 7.6- cm diameter) and 1000-hour dead fuels (Turner et al. 1994). Once fuels reached critical moisture levels later in the season, the spatial pattern of the large, severe standreplacing fires was controlled by weather (wind direction and velocity), not by fuels, stand age, or firefighting activities (Minshall et al. 1989, Wakimoto 1989, Turner et al. 1994).” (Pg. 666)</p> <p><b>Forest Service Response:</b> The cited article is a case study of large wildfires in the Rocky Mountains to assess the potential effectiveness of fuel reduction treatments across a range of major forest types. The authors discuss the differences between high, mixed, and low severity fire regimes and the different forest types characteristic of each one. They conclude that fire regimes, climate, fuel type and abundance, and stand structure vary significantly across the Rocky Mountain region and thus suggest that a “one-size-fits-all” approach to reducing wildfire hazards in the Rocky Mountain region is unlikely to be effective.</p> <p>The quotations provided by the commenter refer to subalpine forests characterized by high severity fire regimes. These quotations are not applicable to the Clear Creek project because vegetation treatments are focused in the dry ponderosa pine and Douglas-fir habitat types which are characterized by low to mixed severity fire regimes. Within low-severity fire regimes, the authors suggest that “reduction of ladder fuels through mechanical thinning and prescribed fire can effectively reduce the unprecedented occurrence of extensive crown fires and restore the historical fire regime in dry, low-elevation ponderosa pine forests”. Within mixed severity fire regimes, the authors conclude, “fuel reduction treatments (mechanical thinning and prescribed burning) may effectively reduce fire severity under moderate weather conditions, but these treatments may not effectively mitigate fire behavior under extreme weather conditions.” The fuel modeling conducted for the Clear Creek project suggests that treatments will be effective at modifying fire behavior to reduce the potential for high severity crown fire within treated areas under normal summer conditions.</p>
48	<p><b>USDA Forest Service Bald Angel Vegetation Management Project Environmental Assessment. La Grande Ranger District, Wallowa-Whitman National Forest December 2006</b></p>

	<p>“Why is the natural fire regime in most Rocky Mountain ponderosa pine–Douglas fir forests variable in severity? Extended droughts and high winds can lead to exceptional fire spread across a broad spectrum of fuel loads and forest structures. For example, almost 25,000 ha of ponderosa pine– Douglas fir forest burned on a single day (9 June 2002), driven by strong winds (Finney et al., 2003). Yet, brief episodes when the winds declined and fuel moisture rose, led to low-severity fire in the same landscape (Finney et al., 2003), suggesting that extreme weather, not fuels, was the chief cause of high-severity fire under those conditions. Even during summer, ponderosa pine–Douglas fir landscapes in the Rocky Mountains are subject to rapid increases in wind speed and changes in direction from jet streams or cold fronts (Baker, 2003).” (pg. 5)</p> <p><b>Forest Service Response:</b> The provided quotation is from the 2006 publication, “Fire, Fuels and Restoration of Ponderosa pine and Douglas-fir Forests in the Rocky Mountains, USA” written by William Baker, Thomas Veblen, and Rosemary Sherriff. This article was included in the Bald Angel EA cited above. The authors suggest that fires in ponderosa pine-Douglas-fir forests in the Rocky Mountains historically varied in severity and that fire exclusion has not clearly and uniformly increased fuels or shifted fire types from low to high severity. The Clear Creek EA acknowledges that, historically, the warm dry forest types within the project area burned at varied severities with some areas of underburning and other areas resulting in moderate to high tree mortality.</p> <p>In response to the provided quotation above, please see responses to #5 and 43.</p>
50	<p><b>Walsh, Jeremy “Scientist: Money to fight beetles as fire mitigation not productive” Durango Herald, April 23, 2010</b></p> <p>“The federal assistance could include funding to help state and local governments mitigate the beetle infestations, the presence of which increases the risk of forest wildfires that endanger surrounding communities and infrastructure, said supporters of the bill.”</p> <p>“Kulakowski, a former research scientist at the University of Colorado at Boulder and current professor at Clark University in Massachusetts, discounted this notion during his testimony. He said climate, not insects, plays the most important role in forest fires, as wildfires are more likely to occur during droughts.”</p> <p><b>Forest Service Response:</b> The Forest Service could not access this article thus the response is to the quotation provided. The quotation does not appear applicable to the Clear Creek project because there is no proposal to control beetle infestations in order to reduce wildfire risk.</p>
51	<p><b>Westerling, Anthony Ph.D., “Does Global Warming Increase Forest Fires?” NPR, <i>Talk of the Nation</i>, July 7, 2006</b></p> <p>“New research published this week in the journal <i>Science</i> says that global warming may be causing more intense wildfires in the western United States. The researchers found that increases in large wildfire activity in the western United States over the past 25 years is ‘strongly associated with increased spring and summer temperatures and an earlier spring snowmelt.’ ”</p> <p><b>Forest Service Response:</b> Please see response to #30 above.</p>
52	<p><b>Wuerthner, George “The Climate Factor - Forest thinning won't deter the coming large fires” <i>Eugene Weekly</i>, December 6, 2007</b></p> <p>“Indeed, climatic conditions drive all big fires — not fuels. All substantial fires occur only if there is extended drought, low humidity, high temperatures and, most importantly, high winds. Wind, in particular, is critical. Wind increases fire spread exponentially.</p> <p>When conditions are "ripe" for a large blaze, fires will burn through all kinds of fuel loads. By contrast if the forest is wet like Oregon's coastal forests, you can have all the fuel in the world, and it won't burn.</p> <p>For this reason, most fires go out without burning more than a few acres. By contrast, when you have drought, low humidity, high temperatures and wind, a few blazes will grow into huge fires. For this reason, approximately 1 percent of all fires are responsible for about 95 to 99 percent of the acreage burned.”</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary. Please see responses to #1, 3, 4, 5, and 8.</p>

<p>54</p>	<p><b>Wuerthner, George “Forest Service misses education opportunity” Published in <i>NewWest</i>, June 2010</b></p> <p>“For example, the Forest Service justifies the Elliston Face timber sale on the basis of reducing what they call “hazardous” fuels (which as an ecologist I call woody biomass). To quote the FS, “This project would reduce wildland fire risk and help protect lives, communities, and ecosystems from the potential consequences of a high-intensity wildland fire within treatment areas.” “</p> <p>“The Forest Service makes these assertions even though the statement is full of falsehoods, misleading and/or unproven assumptions.”</p> <p>“even the Forest Service’s own analysis concludes that logging of the Elliston Face will have some adverse impacts on soils, watersheds, wildlife, scenery and recreation. So we need to ask whether the potential effects of a fire that may not occur for a century or more is worth the negative impacts created by the logging process now?”</p> <p>“The Forest Service’s own analysis has six indicator species— including pileated woodpecker, hairy woodpecker, martin, northern goshawk. These species depend on dead snags and down wood that pine beetles and wildfire create. But the FS treats beetles and wildfire as unwelcome events.”</p> <p>“the FS exploits the fears of misinformed citizens. One can only conclude the agency is still the handmaiden to the timber industry rather than a public servant working on behalf of all citizens of the country.”</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary criticizing a fuels reduction project on the Helena National Forest, which is irrelevant to the Clear Creek project (refer to the purpose and need discussion in the Clear Creek EA on pages 11-15).</p>
<p>55</p>	<p><b>Wuerthner, George “Pine Beetle Fears Misplaced” <i>Helena Independent Record</i>, March 25, 2010</b></p> <p>“Ultimately, fuels do not control fires. If the climate/weather isn’t conducive for fire spread, it doesn’t much matter how much dead wood you have piled up, you won’t get a large fire. As an extreme example, think of all the dead wood lying around on the ground in old-growth West Coast rainforests — tons of fuel, but few fires — because it’s too wet to burn.</p> <p>Large blazes are driven by a combination of extreme drought, low humidity, high temperatures and, most importantly, wind. These conditions do not occur in the same place at the same time very frequently — which is why there are often decades to centuries between major blazes and most fires go out without burning more than a few acres.”</p> <p><b>Forest Service Response:</b> The cited article is unsupported opinion commentary stating that bark beetle-induced tree mortality creates new ecological opportunities, increases biodiversity, improves ecosystem health, and reduces fire risk. This article is irrelevant to the Clear Creek project because salvage of dead and dying trees is not proposed. In response to the quotation provided, please also see responses to #5 and 43.</p>



**APPENDIX B**

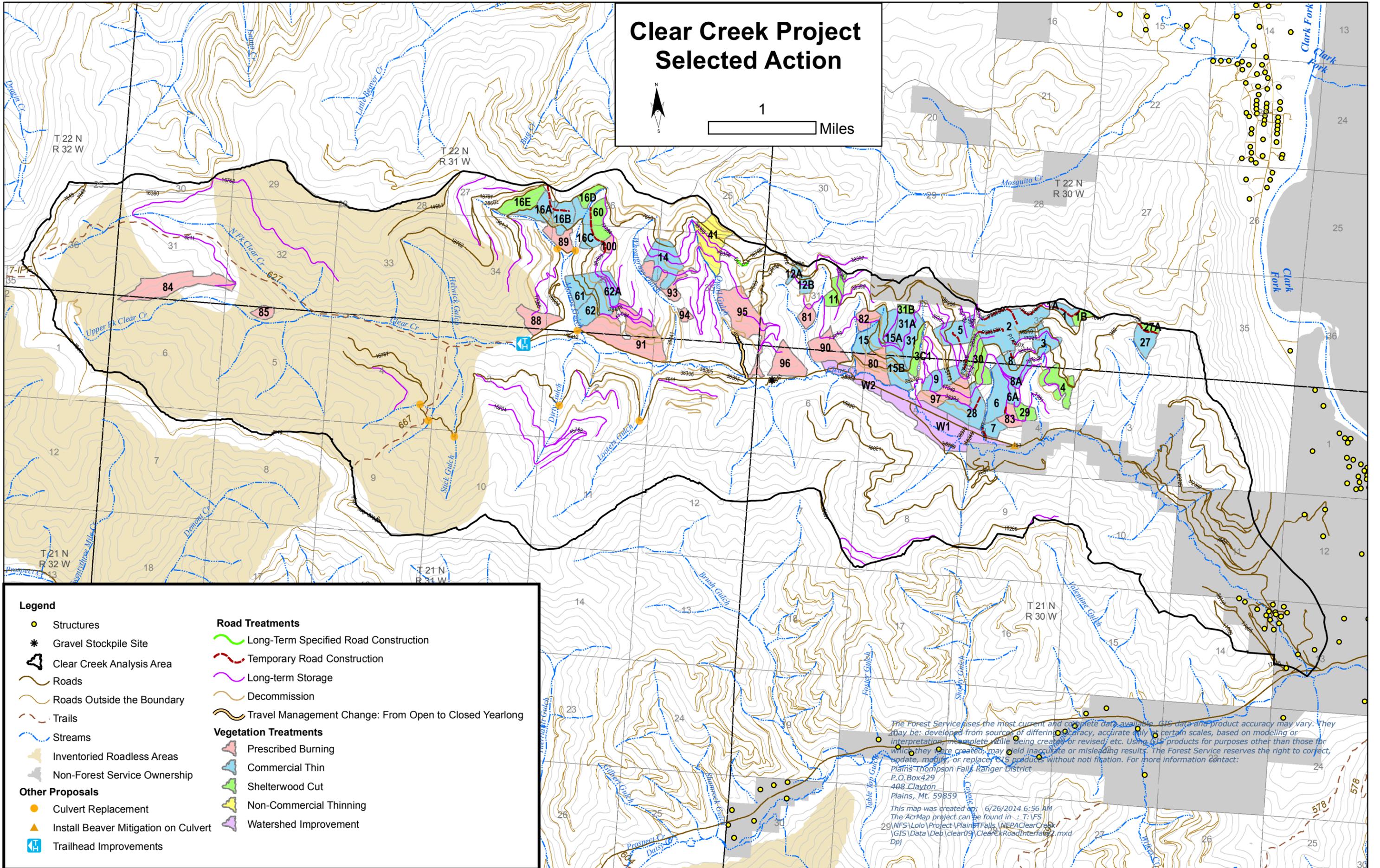
**Map of the Selected Action**



# Clear Creek Project Selected Action



1 Miles



**Legend**

- Structures
- \* Gravel Stockpile Site
- ⬢ Clear Creek Analysis Area
- Roads
- Roads Outside the Boundary
- - Trails
- Streams
- Inventoried Roadless Areas
- Non-Forest Service Ownership
- Other Proposals**
- Culvert Replacement
- ▲ Install Beaver Mitigation on Culvert
- ⬢ Trailhead Improvements

**Road Treatments**

- Long-Term Specified Road Construction
- Temporary Road Construction
- Long-term Storage
- Decommission
- Travel Management Change: From Open to Closed Yearlong

**Vegetation Treatments**

- Prescribed Burning
- Commercial Thin
- Shelterwood Cut
- Non-Commercial Thinning
- Watershed Improvement

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## APPENDIX C

### Details of the Selected Action

**Table C-1: Detailed List of Authorized Vegetation Treatments by Unit** (see map in Appendix B)

Unit #	Acres <sup>1</sup>	Logging System <sup>2</sup>	Proposed Treatment
1	8	Skyline	Commercial Thin
1A	9	Tractor	Commercial Thin
1B	10	Skyline	Shelterwood Cut
2	103	Skyline	Commercial Thin
3	37	Skyline	Commercial Thin
4	40	Skyline	Shelterwood Cut
5	47	Excaline/Skyline	Commercial Thin
6	71	Skyline	Commercial Thin
6A	12	Tractor	Commercial Thin
7	17	Tractor	Commercial Thin
8	9	Skyline	Commercial Thin
8A	5	Tractor	Commercial Thin
9	39	Skyline	Commercial Thin
11	24	Skyline	Shelterwood Cut
12A	8	Skyline	Commercial Thin
12B	12	Skyline	Commercial Thin
14	61	Skyline	Commercial Thin
15	60	Skyline	Commercial Thin
15A	9	Tractor	Commercial Thin
15B	45	Skyline	Commercial Thin
16A	33	Skyline	Commercial Thin
16B	35	Skyline	Commercial Thin
16C	35	Skyline	Commercial Thin
16D	14	Skyline	Shelterwood Cut
16E	35	Skyline	Shelterwood Cut
27	26	Skyline	Commercial Thin
27A	6	Tractor	Shelterwood Cut
28	56	Skyline	Commercial Thin
29	16	Skyline	Shelterwood Cut
30	45	Skyline	Shelterwood Cut
31	27	Skyline	Commercial Thin
31A	25	Excaline	Commercial Thin
31B	7	Excaline	Shelterwood Cut

Unit #	Acres <sup>1</sup>	Logging System <sup>2</sup>	Proposed Treatment
31C	18	Skyline	Shelterwood Cut
41	68	N/A	Non-commercial Thin
60	32	Skyline	Shelterwood Cut
61	45	Skyline	Commercial Thin
62	52	Skyline	Commercial Thin
62A	18	Tractor	Commercial Thin
80	46	N/A	Prescribed Burning
81	15	N/A	Prescribed Burning
82	20	N/A	Prescribed Burning
83	18	N/A	Prescribed Burning
84	88	N/A	Prescribed Burning
85	13	N/A	Prescribed Burning
88	36	N/A	Prescribed Burning
89	24	N/A	Prescribed Burning
90	46	N/A	Prescribed Burning
91	138	N/A	Prescribed Burning
93	32	N/A	Prescribed Burning
94	7	N/A	Prescribed Burning
95	92	N/A	Prescribed Burning
96	44	N/A	Prescribed Burning
97	50	N/A	Prescribed Burning
100	10	N/A	Prescribed Burning
W1	129	N/A	Watershed Improvement
W2	69	N/A	Watershed Improvement
<b>TOTAL</b>	2096		

<sup>1</sup>Acres are approximate

<sup>2</sup>An incidental amount of acres may use another yarding system than what is designated. For example, there may be incidental amounts of tractor skidding within skyline and excaline units.

**Table C-2. Roads to Add to System (Existing Non-system Roads and New Construction)**

Category/ Sub-category/ Road	bmp <sup>1</sup>	emp <sup>2</sup>	Length
<b>Add Existing Non-System Road to System and Store (3-S) after Haul (with BMPs)</b>			
38142	0	0.32	0.32
38172	0	0.71	0.71
38352	0	0.334	0.334
38353	0	0.65	0.65
38354	0	0.71	0.71
38354	1.025	1.474	0.45
38354	1.508	1.68	0.17
38356	0	0.90	0.90
38365	.473	1.70	1.23

<b>Category/ Sub-category/ Road</b>	<b>bmp<sup>1</sup></b>	<b>emp<sup>2</sup></b>	<b>Length</b>
38366	0	1.16	1.16
38387	0	0.53	0.53
38395	0	0.75	0.75
38396	0	0.33	0.33
38610	0	0.25	0.25
<b>Sub-totals</b>			<b>8.49</b>
<b>Add Existing Non-System Road to System and Store (3-SN) without Haul</b>			
38134	0	0.32	0.32
38209	0	0.68	0.68
38289	0	0.29	0.29
38300	0	0.25	0.25
38309	0	0.79	0.79
38312	0	0.82	0.82
38352	0	0.60	0.60
38355	0	0.34	0.34
38365	0	0.11	0.11
38366	0	0.11	0.11
38367	0	0.68	0.68
38368	0	0.78	0.78
38369	0	0.31	0.31
38387	0	0.21	0.21
38398	0	0.04	0.04
38414	0	0.68	0.68
38448	0	0.51	0.51
38449	0	0.35	0.35
38509	0	0.44	0.44
38510	0	0.26	0.26
38604	0	0.26	0.26
38609	0	0.24	0.24
38655	0	0.21	0.21
38351	0	0.47	0.47
38397	0	0.62	0.62
<b>Sub-totals</b>			<b>10.37</b>
<b>Add Existing Non-System Road to System and Leave Open (to Dispersed Recreation) without Haul</b>			
38200	0	0.13	0.13
38305	0	0.23	0.23
38360	0	0.03	0.03
38361	0	0.09	0.09
38362	0	0.09	0.09
38373	0	0.09	0.09
38374	0	0.14	0.14
38412	0	0.09	0.09
<b>Sub-totals</b>			<b>0.89</b>
<b>CATEGORY TOTALS</b>			<b>19.75</b>
<b>Construct System Road and Store (3-S) after Haul</b>			
CC_P14	0	0.157	0.157
<b>Sub-totals</b>			<b>0.157</b>
<b>CATEGORY TOTALS</b>			<b>0.157</b>

<sup>1</sup>bmp = beginning milepost<sup>2</sup>emp = end milepost**Table C-3. Temporary Roads**

Category/ Sub-category/ Road	bmp	emp	Length
<b>Construct Temporary Road</b>			
CC_P1	0	0.33	0.33
CC_P16	0	0.4	0.4
CC_P27	0	0.22	0.22
CC_P7	0	0.11	0.11
P16210A	0	0.25	0.25
P17081A	0	0.07	0.07
P17090X	0	0.05	0.05
P38353A	0	0.15	0.15
P38353B	0	0.09	0.09
P38353X	0	0.26	0.26
P38354X	0	0.28	0.28
P38395X	0	0.15	0.15
P38610X	0	0.08	0.08
P38609X	0	0.50	0.50
<b>Sub-totals</b>			<b>2.94</b>
<b>Reconstruct Non-system Road as a Temporary Road and Decommission after Use (3-D)</b>			
38287	0	0.09	0.09
38394	0	0.07	0.07
38440	0	0.15	0.15
<b>Sub-totals</b>			<b>0.31</b>
<b>CATEGORY TOTALS</b>			<b>3.25</b>

**Table C-4. Decommission Roads**

Category/ Sub-category/ Road	bmp	emp	Length	Closure Level
<b>Decommission System Roads (No Haul)</b>				
16380	0	0.90	0.90	5
18758	0.50	1.04	0.54	5
18759	0.52	1.42	0.90	3D-N
<b>Sub-totals</b>			<b>2.34</b>	
<b>Decommission Non-System Roads (No Haul)</b>				
35230	0	0.51	0.51	3D-N
35231	0	0.57	0.57	3D-N
38137	0	0.08	0.08	3D-N
38147	0	0.29	0.29	3D-N
38171	0	0.19	0.19	3D-N
38173	0	0.14	0.14	3D-N
38174	0	1.09	1.09	3D-N
38175	0	0.10	0.10	3D-N
38176	0	0.41	0.41	3D-N
38182	0	0.13	0.13	3D-N
38187	0	0.25	0.25	3D-N
38220	0	0.25	0.25	3D

Category/ Sub-category/ Road	bmp	emp	Length	Closure Level
38226	0	0.05	0.05	3D
38226	0.05	0.10	0.10	3D-N
38230	0	0.44	0.44	3D-N
38231	0	0.50	0.50	3D-N
38288	0	0.08	0.08	3D-N
38302	0	1.07	1.07	3D-N
38303	0	0.76	0.76	3D-N
38304	0	0.35	0.35	3D-N
38305	0.23	0.55	0.32	5
38306	0	0.69	0.69	3D
38306	0.66	1.2	0.52	3D-N
38308	0	1.08	1.08	3D-N
38310	0	1.04	1.04	3D-N
38311	0	0.81	0.81	3D-N
38316	0	0.17	0.17	3D-N
38337	0	0.52	0.52	3D-N
38338	0	0.79	0.79	3D-N
38355	0.34	0.81	0.47	3D-N
38365	0	0.47	0.47	3D-N
38367	0.68	1.31	0.64	3D-N
38399	0	0.28	0.28	3D-N
38413	0	0.15	0.15	3D
38414	0	0.38	0.38	3D-N
38432	0	0.57	0.57	3D-N
38434	0	0.04	0.04	3D-N
38436	0	0.01	0.01	3D-N
38438	0	0.43	0.43	3D-N
38439	0	0.96	0.96	3D-N
38440	0.15	0.8	0.65	3D-N
38441	0	0.53	0.53	3D
38441	0.53	0.88	0.35	3D-N
38442	0	0.51	0.51	3D-N
38443	0	0.55	0.55	3D-N
38444	0	0.44	0.44	3D-N
38445	0	0.57	0.57	3D-N
38446	0	0.35	0.35	3D-N
38447	0	0.88	0.88	3D-N
38450	0	0.51	0.51	3D-N
38451	0	0.50	0.50	3D-N
38452	0	0.38	0.38	3D-N
38483	0	0.11	0.11	3D-N
38507	0	0.19	0.19	3D-N
38508	0	0.32	0.32	3D-N
38509	0.44	0.56	0.12	3D-N
38575	0	0.25	0.25	3D-N
38576	0	0.17	0.17	3D-N
38577	0	0.34	0.34	3D-N
38602	0	1.07	1.07	3D
38603	0	0.49	0.49	3D-N
38605	0	0.05	0.05	3D-N
38606	0	0.05	0.05	3D-N

Category/ Sub-category/ Road	bmp	emp	Length	Closure Level
38649	0	0.44	0.44	3D-N
38650	0	0.13	0.13	3D-N
38651	0	0.30	0.30	3D-N
38652	0	0.06	0.06	3D-N
38653	0	0.13	0.13	3D-N
38654	0	0.11	0.11	3D-N
38655	0	0.29	0.29	3D-N
38656	0	0.08	0.08	3D-N
<b>Sub-totals</b>			<b>28.62</b>	
<b>CATEGORY TOTALS</b>			<b>30.96</b>	

**Table C-5. Store Existing System Road**

Road	bmp	emp	Length
<b>Store (3-S) after Haul (with BMPs)</b>			
17049	0.0	2.645	2.645
17081	0	0.76	0.76
17084 (Store Level 2)	0	1.73	1.73
17084 (Store Level 2)	2.10	2.50	0.4
17088	0	0.05	0.05
17090	0	0.5	0.5
<b>Sub-totals</b>			<b>6.085</b>
<b>Store (3-S) without Haul</b>			
4211	0	2.40	2.40
16204	0	1.38	1.38
16768	0	1.7	1.7
16788	0	1.553	1.553
17048	0	1.15	1.15
17081 (split)	0.76	1.15	0.39
17086	0	0.24	0.24
<b>Sub-totals</b>			<b>8.813</b>
<b>Store (3-SN) without Haul</b>			
16781			0.62
17087			0.47
18795			0.44
16788			0.5582
17049			0.2496
17084			0.38
17085			0.7000
17089			0.0984
18758			1.6081
18759			0.5857
18763			0.8597
16809			0.2825
16818			1.1187
16819			0.3222
17088			0.1076
<b>Sub-totals</b>			<b>8.4007</b>
<b>CATEGORY TOTALS</b>			<b>23.30</b>

**Table C-6. Upgrades, Pre-Haul Maintenance (BMPs) on Existing System Roads to be Retained**

Road	bmp	emp	Length
<b>Pre-Haul Maintenance (BMPs) on Existing System Roads to be Retained</b>			
153			4.73
301-2			4.08
302			4.36
7650			7.12
16210			2.07
17082			0.32
<b>Sub-totals</b>			<b>22.68</b>
<b>Upgrades and BMPs on Existing Roads Not Required for Haul</b>			
Clear Creek Road Spot Surfacing	3.0	4.04	1.04
Clear Creek Road Realignment (Stream Buffer)			1.04
Road 153 Switch Back Relocation (Higher Estimate)			0.19
<b>Sub-totals</b>			<b>2.27</b>
<b>CATEGORY TOTALS</b>			<b>24.95</b>

**Figure C-1: Road Closure Levels**

Level Allowed Suffix/E,/P /E Entrance Oblit, /P Path	Typical Device Site specific situation dependant	Typical Treatment All treatments are as-needed.	Status
<b>1</b>	Gate	-Blade, seed, fertilize; Normal drainage (BMP's) -Treat noxious weeds	Remains as NFSR as either long-term or intermittent term service.
<b>2</b>	Gate, guardrail, concrete, earth barrier or re-contour intersection	-Type III dip, waterbars OR outslope -Scarify, seed, fertilize -May scatter slash -Treat noxious weeds	Remains as NFSR as either long-term or intermittent term service with gate, or intermittent term service with barrier.
<b>3-SN</b> Natural Storage	Re-contour intersection (entrance oblit) or rock/earth barrier as needed.	No physical or weed treatment needed, Naturally revegetated and stabilized.	S- Remains as NFSR as intermittent stored service.
<b>3-S</b> Storage		-Waterbar or outslope -Remove CMP's & restore watercourse -Ditch relief pipes can remain w/ waterbars -Light scarify, seed, as needed -Treat noxious weeds	
<b>3-DN</b> Natural Decommission	Re-contour intersection (entrance oblit) or rock/earth barrier as needed.	No physical or weed treatment needed, Naturally revegetated and stabilized.	D- Road is not needed for long term use. Remove from NFSR by route status change to decommissioned. Effectiveness monitored.
<b>3-D</b> Decommission		-Waterbar or outslope -Remove CMP's & restore watercourse -Scarify or Rip 6-12", seed, fertilize as needed -Scatter slash on slopes, -Treat noxious weeds.	
<b>4</b> Decommission	Re-contour intersection (entrance oblit) or rock/earth barrier	-Waterbar, outslope or selective re-contour -Remove all CMP's & restore watercourse -Rip 12-18", seed, fertilize -Scatter slash on slopes -Treat noxious weeds	Road is not needed for long term use. Remove from NFSR by route status change to decommissioned. Effectiveness monitored.
<b>5</b> Decommission	Re-contour	-Re-contour entire prism -Remove all CMP's and restore watercourses -Seed and fertilize -Scatter slash on slopes -Treat noxious weeds	Road is not needed for long term use. Remove from NFSR by route status change to decommissioned. Effectiveness monitored.



## APPENDIX D

### Resource Protection Measures and Monitoring

#### Resource Protection Measures

Resource Protection Measure	Resource Objective	Description of Resource Protection Measure	Units/Location	Standard Operating Procedure (SOP), Project Specific Measure
<b>Air Quality</b>				
1	To ensure air quality standards are met	Prescribed burning would be conducted under the constraints set by the Montana Airshed Group. Prescribed burning would only be permitted when approved.	All units	SOP
2		Although burns would be planned and implemented to minimize smoke impacts, occasional pooling of smoke could be anticipated due to differences between predicted forecasts and actual weather. Should a situation like this occur, other restrictions on prescribed burning may be implemented by the Plains/Thompson Falls Ranger District in addition to those imposed by the State's smoke management unit until clearing occurs.	All units	SOP
<b>Botany</b>				
3	To protect sensitive plant populations	In Units 15B and 28, hill monkeyflower plant populations would be buffered from temporary road construction and logging activities.	Units 15B & 28	Project Specific
4		To ensure protection of whitebark pine outside the western end of Unit 84, prescribed burning would be done when the area to be protected is snow-covered or retains adequate fuel moisture to resist burning.	Unit 84	Project Specific
<b>Soil</b>				
5	To reduce potential soil disturbance and maintain soil productivity	Summer or dry season ground-based operations would be restricted to slopes less than 35 percent and dry soil conditions unless reviewed by the Forest soil scientist.	Tractor units (1A, 6A, 8A, 15A, 27A, 62A)	SOP
6		Skyline corridors would be approved by the Forest Service in advance of felling and provide for the suspension of the leading end of each log. Avoid designating a corridor within ephemeral draws.	Units to be skyline yarded	SOP
7		Restrict winter season ground-based operations to slopes less than 35 percent and frozen or snow-covered soil conditions <b>OR</b> Log Forward operations over a slash mat, dry soil conditions and slopes less than 35 percent unless reviewed by the Forest Soil Scientist.	Unit 7	SOP, Project Specific
8		To reduce the potential for soil erosion one of the following measures would be applied:	Units 1A, 6A, 7, 8A, 27A,	Project Specific

Resource Protection Measure	Resource Objective	Description of Resource Protection Measure	Units/Location	Standard Operating Procedure (SOP), Project Specific Measure
		1) Slash would be left on skid trails that have exposed bare mineral soil. Slash would be placed over 65-70 percent of the skid trail to a depth of 2-3 inches in contact with the soil surface. This generally equates to 22-26 tons/acres. Slash would not be placed on units harvested in the winter or over frozen ground.  2) These units would be harvested in the winter or with a log forwarder over a slash mat.	62A	
9		Where feasible, slash would be piled and burned where detrimental soil disturbance already exists, such as on old log landings, skid trails, and roads associated with past or current activity.	All units	SOP, Project Specific
10		Where feasible, handpiles would be no more than approximately 6 feet in diameter and 4 feet high.	All units	Project Specific, SOP
11		Where feasible, slash would be left through one winter after cutting to allow for initial decomposition and nutrient leaching. Units adjacent to private land may be piled and burned as soon as possible to reduce fire hazard.	All units	Project Specific, SOP
12	To reduce the potential for soil erosion	Upon completion of maintenance burning or other prescribed fire activities, bare mineral soil would not be exposed on more than 15% of the burn area. Effective ground cover includes vegetation, duff, litter, rock, moss, lichen, and wood.	Units where prescribed fire would be used	Project Specific, SOP
13		For temporary roads and excaline/constructed skid trails, In addition to timber sale contract provisions: 1) Upon construction, the forest floor and top soil would be stockpiled, windrowed, or bermed as feasible 2) Weeds would be treated with herbicide as needed. 3) The trail would be recontoured, scarified, and seeded. Any berms would be pulled back over the prism and large woody material scattered. 4) Slash would be placed over 65-70 percent of the trail to a depth of 2-3 inches and in direct contact with the soil surface. This generally equates to 22-26 tons/acre.	Unit 31A; All temporary roads and constructed skid trails	Project Specific
14	To maintain soil productivity	Down and live standing (for future recruitment) coarse woody debris would be left scattered through the unit, trending towards the maximum levels as identified in the Lolo National Forest Coarse Woody Material Guide. In Unit 7, leave all damaged trees.	Units W1, W2, 7	SOP, Project Specific
15		In Unit W1, the soil scientist, hydrologist, or fisheries biologist would work directly with the thinning crew to identify trees that can be cut outside the RHCA stream buffer. These trees would be left on site and would contribute to soil shading, soil moisture retention, and/or soil temperature	Unit W1	Project Specific

Resource Protection Measure	Resource Objective	Description of Resource Protection Measure	Units/Location	Standard Operating Procedure (SOP), Project Specific Measure
		moderation.		
<b>Weeds</b>				
16	To reduce the potential for weed spread.	Pre-treat existing weed populations on roads, roadsides, obvious two-track roads, potential landings with herbicide prior to ground disturbing activities and prescribed burning that would occur near them. Subject to approval from the District Weed Coordinator, this requirement may be waived if timing of implementation is such that there is no effective spray season (i.e. spring, summer, or fall) prior to winter logging. Where possible, treat weeds at least one growing season prior to activities. This includes roads adjacent to or within prescribed burn units with existing weed populations on them.	Project Area	Project Specific, SOP
17	To reduce the potential effects of herbicide treatment on native vegetation	To protect native vegetation sites that are located away from the influence of roads, they shall not be broadcast treated with herbicide more than once every five years. Areas of heavy use (such as roads, landings, skid trails, etc.) where the vegetation consists of native and non-invasive, non-natives plants can be treated following the applicable herbicide label in reference to annual application limitations.	Project Area	Project Specific
18	To reduce the potential for weed spread.	Skid trails and landings would be approved prior to use. Where possible, locate landings and skid trails where there are no obvious standing weed infestations.	All units	Project Specific, SOP
19	To reduce the potential for the introduction and spread of weeds	As needed, seed disturbed sites (cuts/fills/running surfaces of roads, landings, skid trails, landing piles following burning, etc), created by project activities, with native seed mixtures or appropriate Lolo seed mixtures. Straw used for road stabilization and erosion control would be certified weed-free or weed seed-free.	Disturbed sites	SOP
20		If gravel or other material is hauled for road surfacing, it would be from a site (pit) that has been previously treated for weeds and is currently weed free.	Roads used for the project	Project Specific, SOP
21		During prescribed burning the duff layer should be near 100 percent water content, at least in the lower half of the duff layer.	Areas to be prescribed burned.	Project Specific
22		All off-road logging and construction equipment would be cleaned of soil and vegetative material prior to entering the project area.	All units	SOP
23		The stockpiled soil from the construction of the gravel storage site will be grass-seeded as soon as possible after site development. After the gravel is removed, the stockpile site will be rehabilitated by replacing the top soil, scattering slash across the site, and grass-seeding.	Gravel stockpile area	Project Specific
<b>Wildlife</b>				
24	To ensure sufficient snag habitat is	Lolo National Forest Dead and Down Habitat Components Guidelines (June 1997) and Appendix N of the Lolo National Forest Plan (1996)	All Units	SOP

Resource Protection Measure	Resource Objective	Description of Resource Protection Measure	Units/Location	Standard Operating Procedure (SOP), Project Specific Measure								
25	retained for snag dependent species.	<p>would be followed in cutting units.</p> <p>Unless specified for removal in the silvicultural prescription, snags shall remain within treatment areas. Snags that need to be cut for safety or operational reasons shall remain in the unit to provide coarse wood for wildlife and soils unless they interfere with the safe and efficient conduct of logging.</p>	All Units	SOP								
26	To ensure protection of threatened, endangered, and sensitive species.	If any specific wildlife features relating to endangered, threatened, or sensitive species are observed during project activities, the requirements of contract standard provision B6.24, Site-specific Special Protection Measures, would apply.	All Units	SOP								
27		<p>Units 11 and 12B would be surveyed for flammulated owls (in late May or June) at least two nights the year harvest is to occur to determine presence. If the units are occupied, harvest of Units 11 and 12b would not occur between 4/1 and 8/15 to enable young owls time to fledge.</p> <p>If prescribed burning occurs in the spring, attempts should be made to burn as early as possible to avoid disturbance to any nesting owls, if present.</p>	Units 11 and 12B	Project Specific								
<b>Aquatics</b>												
28	To protect watershed resources by minimizing or eliminating potential sediment delivery to waterbodies.	<p>Tree cutting and ground-based equipment would be prohibited from all RHCA buffers. However, tree cutting and removal would be allowed within ephemeral draw buffers but ground-based equipment would be prohibited. Equipment may cross ephemeral draws at designated crossings.</p> <p>Within W1, no tree cutting would occur within RHCAs.</p> <p>The construction of hand fireline, as necessary, would not be allowed within these buffer areas unless approved by fisheries biologist and/or hydrologist. Any variations from these buffers would need to be approved by a fisheries biologist, hydrologist, or soil scientist prior to implementation.</p> <table border="1"> <thead> <tr> <th>Channel Type</th> <th>Buffer (feet)</th> </tr> </thead> <tbody> <tr> <td>Perennial fish bearing streams</td> <td>300</td> </tr> <tr> <td>Perennial non-fish bearing streams and wetlands greater than 1 acres</td> <td>150</td> </tr> <tr> <td>Seasonally flowing or intermittent streams and wetlands less than 1 acre</td> <td>100</td> </tr> </tbody> </table>	Channel Type	Buffer (feet)	Perennial fish bearing streams	300	Perennial non-fish bearing streams and wetlands greater than 1 acres	150	Seasonally flowing or intermittent streams and wetlands less than 1 acre	100	All harvest units	SOP
Channel Type	Buffer (feet)											
Perennial fish bearing streams	300											
Perennial non-fish bearing streams and wetlands greater than 1 acres	150											
Seasonally flowing or intermittent streams and wetlands less than 1 acre	100											

Resource Protection Measure	Resource Objective	Description of Resource Protection Measure	Units/Location	Standard Operating Procedure (SOP), Project Specific Measure
		Ephemeral draws	50	
29		Prior to haul activities, surface drainage requirements would be met for roads to be used for haul	All roads used for hauling	SOP
30		Haul would be prohibited on Road 153 between the intersection with Road 7650 and the Clear Creek trailhead.	Road 153	Project Specific

**MONITORING**

For this project, monitoring will be implemented in accordance with the requirements outlined in the Lolo National Forest Plan.

Monitoring of the vegetation treatment activities implemented under contract will occur during and immediately following contract implementation. All preparation and subsequent project-associated operations will be monitored by Forest Service representatives to ensure compliance with specifications.

Water Quality and Fisheries

Implementation and effectiveness monitoring will be completed for road decommissioning and storage activities, culvert removal sites, and riparian habitat conservation area (RHCA) buffers (stream buffers) on a sample basis. The intent of such monitoring will be to ensure protection of water quality and that activities were completed as designed.

Fire, Fuels and Air Quality

Prescribed burning will follow an approved Prescribed Fire Plan, which will define the acceptable range of measurable criteria for environmental conditions and fire behavior. Prior to ignition, fuel moistures and weather conditions will be monitored to ensure they are within acceptable limits. During ignition, weather conditions, smoke dispersion, and fire behavior parameters will be monitored to ensure they are within acceptable limits.

Vegetation

A certified Silviculturist will develop or approve silvicultural prescriptions for each vegetation treatment unit and will assure compliance with these prescriptions during sale preparation, contract administration, and post-harvest activities. The silviculturist will be involved in and/or consulted during treatment area boundary layout, tree designation, and contract preparation.

Activities that involve the removal of wood products will be monitored by a qualified Timber Sale Contract Administration team, including a Contracting Officer, Forest Service Representative, Timber Sale Administrator, and/or Harvest Inspector. This team will inspect provisions of the timber sale contract. Specifically for forest vegetation protection, they will monitor snag retention, protection of residual trees, utilization of material meeting merchantability specifications, and retention of down coarse woody material.

Regeneration success in harvested areas will be monitored following standard procedures in Forest Service Handbooks. As necessary, additional treatments will be implemented until stands met certification standards identified in silvicultural prescriptions.

### Weeds

Shelterwood harvest units and associated landings will be monitored for the presence of weeds in conjunction with the 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> year regeneration surveys. Units to be commercially thinned and their associated landings will be monitored for the presence of weeds in conjunction with the post-treatment vegetation monitoring. Other landings will be monitored in conjunction with the roadside weed spraying maintenance schedule. If weeds (other than cheatgrass) are found on skid trails or landings, they will be treated using an appropriate control method as needed.

An adaptive management approach will be used for prescribed burning only treatments to determine weed population response trends. Existing weed populations will be monitored before and after the burning of the first two units. If monitoring indicates a marked increase in weeds, the treatment and other potential contributing factors to the increase will be evaluated. Depending on the conclusions reached, the remaining prescribed burn units could proceed, be dropped, or additional mitigations applied.

### Wildlife

Units 5, 31, and 41 will be monitored for snags following completion of the mechanical treatment and prescribed burning using the Regional snag management protocol. This data will be compared to the pre-treatment snag information collected in 2011 to determine change resulting from the project.

## APPENDIX E

### U.S. Fish and Wildlife Service Biological Opinion (9/9/2013) Conclusions on Bull Trout

#### Jeopardy Analysis

After reviewing the current status of bull trout, the environmental baseline for the action area, the effects of the proposed management actions, and the cumulative effects, it is the Service's biological opinion that the actions, as proposed, are not likely to jeopardize the continued existence of bull trout. This conclusion is based on the magnitude of the project effects (to reproduction, distribution, and abundance) in relation to the listed population. Implementing regulations for section 7 (50 CFR 402) defines "jeopardize the continued existence of" as "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."

Jeopardy determinations for bull trout are made at the scale of the listed entity, which is the coterminous United States population (64 FR 58910). This follows the April 20, 2006, analytical framework guidance described in the Service's memorandum to Ecological Services Project Leaders in Idaho, Oregon and Washington from the Assistant Regional Director – Ecological Services, Region 1 (USFWS 2006). The guidance indicates that a biological opinion should concisely discuss all the effects and take into account how those effects are likely to influence the survival and recovery functions of the affected interim recovery unit(s), which should be the basis for determining if the proposed action is "likely to appreciably reduce both survival and recovery of the coterminous United States population of bull trout in the wild."

The approach to the jeopardy analysis in relation to the proposed action follows a hierarchal relationship between units of analysis (i.e., geographical subdivisions) that characterize effects at the lowest unit or scale of analysis (the local population) toward the highest unit or scale of analysis (the Columbia River Interim Recovery Unit) of analysis. The hierarchal relationship between units of analysis (local population, core areas) used to determine whether the proposed action, is likely to jeopardize the survival and recovery of bull trout. Should the adverse effects of the proposed action not rise to the level where it appreciably reduces both survival and recovery of the species at a lower scale, such as the local or core population, the proposed action could not jeopardize bull trout in the coterminous United States (i.e., rangewide). Therefore, the determination would result in a no-jeopardy finding. However, should a proposed action cause adverse effects that are determined to appreciably reduce both survival and recovery of the species at a lower scale of analysis (i.e., local population), then further analysis is warranted at the next higher scale (i.e., core area).

Our conclusion is based on the magnitude of the project effects in relation to the Prospect Creek local population and the Lower Clark Fork core area meta-population of bull trout. Our rationale for this no jeopardy conclusion is based on the following:

- Minimization measures (i.e., required mitigations and Best Management Practices) employed by the Forest during implementation of the proposed action are likely to be effective in

reducing sediment generated by the proposed project activities and continuing use of the road system, thus minimizing effects to Clear Creek and Prospect Creek.

- Sediment increases as a result of the proposed action are limited in scale (less than one percent increase), affecting only migratory habitat, and are anticipated to persist for no more than six years during implementation, after which road improvements will reduce the current level of sediment contributed by roads by approximately one-third (30 tons/yr) by year 8.
- The majority of sediment generated by project activities will not enter Clear Creek except as flushing high spring flows when deposition is unlikely.
- Bull trout are extremely rare in lower Clear Creek and absent in upper Clear Creek where project effects may occur, and few, if any individuals are expected to be affected by the project.

As a result, the Service concludes that implementation of this project is not likely to jeopardize the continued existence of bull trout at the scale of the Prospect Creek local population and the Lower Clark Fork River core area, and by extension not likely to jeopardize at the Clark Fork River Management Unit and the larger scale of the Columbia Headwaters Interim Recovery Unit. Therefore, the Service concludes that this project will not appreciably reduce both the survival and recovery of the coterminous United States population of the bull trout, and will contribute marginally to improved habitat.

### **Adverse Modification Analysis**

After reviewing the current status of Prospect Creek and the Lower Clark Fork River core area of bull trout and its relationship to the Upper Columbia River bull trout population, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is the Service's opinion the actions as proposed are not likely to destroy or adversely modify the bull trout critical habitat in Prospect Creek and the Lower Clark Fork River critical habitat sub-unit, and by extension, the Clark Fork River critical habitat unit. Pursuant to current national policy and the statutory provisions of the Act, destruction or adverse modification is determined on the basis of whether, with implementation of the proposed action, the affected critical habitat or retain the current ability for the primary constituent elements to be functionally established to serve the intended conservation role for the species.

Therefore, we conclude that critical habitat will not be destroyed or adversely modified because increased sedimentation is a temporary adverse impact to critical habitat in Prospect Creek, and over the long term, sediment delivery will marginally decrease, thus improving critical habitat. Decommissioning and storage of roads in upper Clear Creek will also reduce the risk of catastrophic failure of roads that could have downstream impacts in Prospect Creek.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding,

feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

### **Anticipated Take**

We do not anticipate the proposed action will incidentally take bull trout for two reasons: 1) bull trout are extremely rare in the action area, and 2) increased sediment effects will be diluted and/or limited. The proposed action will result in increased fine sediment, a portion of which will enter waterways, and thus may adversely affect bull trout. However, approximately 90% of these sediment inputs will be generated above the intermittent reach and can only be delivered to occupied habitat during the first flushing spring flows (March-April) when bull trout are unlikely to occupy the action area. Additionally, high water volume would tend to dilute such project-generated sediment, and the increase over seasonally high natural sediment levels would be difficult to ascertain. Sediment produced by streambank activities would be limited in amount and duration, and bull trout, if present, would be expected to simply move to adjacent habitat nearby (e.g., across the channel). Finally, occupied streams within the action area are foraging, migration, and overwintering habitat occupied by juvenile to adults that are less impacted by suspended sediment. Therefore, we have determined that if a bull trout were present in the action area at the time of elevated sediment input, the effect is not expected to rise to a level to disrupt normal behavior patterns such as breeding, feeding, or sheltering to a bull trout even though some adverse effect may happen as a result of displacement. Consequently, the Service does not anticipate the proposed action will incidentally take bull trout.

### **Conservation Recommendations**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop information.

1. The Forest should continue to monitor, inventory, investigate and document the bull trout populations and spawning activities throughout the Prospect Creek area.
2. The Forest should continue to reduce road density, especially roads within Riparian Habitat Conservation Areas, throughout Clear Creek and other subwatersheds affecting the Prospect Creek local population to further minimize risk and impacts from sedimentation.

So that the Service is kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

### **Reinitiation Notice**

This concludes formal consultation for bull trout on the Clear Creek Project on the Lolo National Forest. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a

manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.