United States Department of Agriculture

Forest Service

Northern Region

Decision Notice

Spring Gulch Timber Sale Project

Kootenai National Forest
Sanders County, Montana

April 2013

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Decision Notice

Kootenai National Forest
Cabinet Ranger District
Responsible Official - Paul Bradford, Forest Supervisor

1. Introduction

The Forest Service has prepared this Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the project's foreseeable environmental effects for consideration in determining whether or not to prepare an Environmental Impact Statement.

1.1 Decision Summary

After careful review of the Revised Environmental Assessment (EA) for the Spring Gulch Timber Sale Project, the Finding of No Significant Impact (FONSI), comments from the public, and the project file, I have made my decision for a course of action for vegetation management in the Spring Gulch project area. It is my decision to select Alternative 2 for implementation. The selected alternative includes a combination of mechanical treatments, hand treatments and prescribed burning to treat forest stands in the project area. Actions related to this decision include intermediate and shelterwood harvest on 256 acres, precommercial thinning on 66 acres, and 231 acres of natural fuels burning in the Spring Gulch drainage on the Cabinet Ranger District.

1.2 Overview of the Project Area

The project area is located in Sanders County, Montana; approximately eight air miles southeast of Trout Creek, Montana (see map in Appendix A), on the border between the Kootenai and Lolo National Forests. The project area consists of National Forest System (NFS) lands and includes Spring Gulch Creek and smaller tributaries which all drain into the Clark Fork River, upstream from the Noxon Rapids hydroelectric dam. The main access point into the Project Area is from State Highway 200, via the Blue Slide Road #1733. The project area is approximately 796 acres in size and is immediately adjacent to, but does not include private ownership. It is located in Sections 3, 9, and 10; T23N; R30W; PMM, Sanders County.

1.3 Purpose and Need for Action

The purpose and need for action is discussed in Chapter 1 of the revised EA (pages 3-4), and summarized here. The purpose of, and need for treatment in the Project Area is:

- **Limit forest and tree damage occurring from insect and disease activity to specific timbered stands.**

There is extensive root disease in the more shade tolerant tree species such as grand fir and Douglas-fir throughout the forest stands planned for intermediate and regeneration harvest. In addition, a mountain pine beetle outbreak is currently resulting in mortality in lodgepole pine. Thinning these stands, to both increase representation of disease tolerant species (western larch and ponderosa pine, etc.) and to reduce between tree competition for water, sunlight and nutrients, would result more resilient, disease and insect resistant forested communities. In 90 treatment acres, harvest of trees impacted with root disease and beetles would result in regeneration of the stands, as viable retention trees are in low numbers.

- **Reduce hazardous fuels within the wildland urban interface (WUI).**

The project area is within the Wildland/Urban Interface, as identified in the Sanders County Community Fire Protection Plan. Fire suppression and the subsequent lack of fires over the last 80 years in this area has led to increased fuel loading, changes in stand structure, and changes in species composition. Overall, accelerated accumulation of woody fuels related to the mountain pine beetle mortality and the relative absence of fire has led to increased potential for crown level fires which could result in the loss of environmental values on NFS lands such as forest cover, soil productivity, water quality and visual quality. Financial losses could also include homes and improvements on adjacent privately owned lands, and timber values on NFS lands.

- **Contribute forest products to the local and regional economy.**

The sale of commercial wood products resulting from timber stand management in this project would, by itself and when considered in the context of the overall timber program on the Cabinet Ranger District and the Kootenai National Forest in general, contribute to the local economy. Conducting road work, stand improvement and fuel reduction activities associated with this decision would provide jobs in the local area for the duration of activities.

1.4 Public Involvement

The proposed action was developed and refined through a series of resource evaluations, field reviews, Interdisciplinary Team (IDT) meetings, and public input. The proposed action has been crafted to avoid adverse impacts to the environment. Using ideas and concerns derived from this process, the IDT developed the proposed action described in this decision document.

On September 10, 2009, scoping notices were mailed to interested and affected parties. An analysis and response to public comments received during the scoping period is documented in the original EA, Appendix A (Project File Volume 36 Doc 1). This scoping effort resulted in one letter expressing a desire that the project be based upon ecological sustainability, offering a paper published by the Biodiversity Legal Foundation, titled Biocentric Ecological Sustainability: a Citizen's Guide, by author Reed Noss. Each specialist was required to identify potential impacts to their discipline considering potential cumulative effect of past, present and reasonably foreseeable actions.

Those providing comments on the scoping notice or indicating continuing interest in the project received a copy of the original Environmental Assessment (EA) in May 2011. One comment letter was received on the original EA. A response to the comments in the letter is included in the original Decision Notice of August 2011, Appendix D (Project File Volume 36 Doc 2) and the revised EA (Appendix A). Many of the comments resulted from the concise format of the original EA. Summaries of the specialist's reports were used in an effort to reduce the size of the document while referring to the full reports in the project file. Limited access to the project file made acquiring the full reports and analysis data difficult.

An appeal was subsequently received on the project, and the Forest Service held an informal resolution meeting between the Responsible Official and the appellants. This informal resolution conference call was held on October 20, 2011 with representatives from the Alliance for the Wild Rockies from Missoula, MT and the Lands Council from Spokane, WA. There was no agreement on project changes that would result in withdrawal of the appeal.

Upon further discussion between the Responsible Official and the IDT, the Forest Service elected to gather more information pertaining to the project and to better clarify portions of the original Environmental Assessment. On November 1, 2011, a Notice of Decision Withdrawal was placed in the *Daily Inter Lake*, Kalispell, MT.

In November 2011, Jeff Juel, a representative of the Lands Council/Alliance for the Wild Rockies, visited the project area with the Acting District Ranger, Randy Hojem and district staff Doug Grupenhoff and Steve Snell. The conversations were documented in notes from the district as well as in a follow up letter from Mr. Juel. Many of the Lands Council/Alliance for the Wild Rockies' appeal points were discussed. Mr. Juel's letter and the notes taken by the district on the visit were reviewed in a subsequent Interdisciplinary Team meeting. Topics reviewed included harvesting in unroaded areas, utilizing closed roads for the project, harvesting in unsuitable MAs, grizzly bear impacts from road use, old growth protection and development , climate change, fire risk reduction, soil erosion and sediment, detrimental soil disturbance and Travel Analysis. The IDT used the results of this review, and evaluation of other public and internal comments to revise the EA.

On January 17th, 2013 the Spring Gulch Timber Sale Project Revised EA was mailed out for public comments. Seven comment letters were received, five of which were in favor of the project and two expressing concerns with the proposed activities. The responses to these comments are included in this document (Appendix D).

1.5 Issues and Alternative Development

In the early phases of project development, public interest and input were solicited through the use of area newspapers (legal ads), the Kootenai National Forest (KNF) Quarterly Schedule of Proposed Actions, letters to interested members of the public and adjacent landowners. More detailed information about these efforts and the comments received during scoping were provided in the May 2011 original EA and are included in the project record.

Development of alternatives was based on the existing condition of resources, the purpose and need, and issues identified by other agencies and the public (revised EA, Chapter 2 - Alternatives). Four alternatives were considered, two in detail.

The two alternatives that were studied in detail were Alternative 1, the no action alternative and Alternative 2, the Proposed Action presented to the public during scoping. The proposed activities were identified through a comparison of existing and desired conditions for hazardous fuels, forest vegetation and wildlife habitat quality.

Under my direction, the Interdisciplinary Team carefully crafted the proposed action in such a way as to avoid any adverse impacts to the environment. This vegetation management proposal is focused, on a fairly small, concisely identified project area. Detailed descriptions of the alternatives, existing conditions, and environmental effects that would occur under each alternative were analyzed and documented in the Spring Gulch Timber Sale Project Revised EA. Very little response to scoping of the proposed action was received. The comments received during scoping were not site-specific

enough and did not disclose unresolved conflict concerning alternative uses of available resources, or identify significant issues which would lead us to develop additional alternatives to the proposed action. Scoping comments were used to structure the analysis conducted in the Revised EA and to formulate design criteria for the project. The end result is a project with two alternatives; the no action alternative, and the proposed action.

Based on public comments, the IDT considered an alternative that utilized only existing open roads to meet the purpose and need for action. This was recommended as a means to reduce potential effects to grizzly bears in the Spring Gulch project area. There was concern that impacts to core habitat and open motorized route density in Bear Management Unit (BMU) 8 and BMU 22 would have undesirable impacts to bear habitat. Preliminary analysis indicated that opening NFSR 2771 for management activities would result in a slight decrease in core habitat of 29 acres and a slight increase in open road density (0.2%) in BMU 8, and only for the duration of the project. The same analysis showed there would be a slight decrease in core habitat of acres and a slight increase in open road density in BMU 22, and only for the duration of the project. Concern of illegal off-road vehicle use on roads that would be opened for administrative traffic during implementation of project activities, then closed to all vehicle access was taken into consideration as well. Illegal motorized access was considered a law enforcement issue and the road would be closed with an earthen berm to discourage such illegal use. Based on the analysis for the two BMU's, and the fact that both alternatives are consistent with the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (2011), there is negligible difference between this scenario and the proposed action. Therefore, this alternative was eliminated from detailed study.

We heard from the public that there was concern with logging in Big Game Winter Range (MA 10) and potential loss of snags. An alternative that would not require a Forest Plan amendment for activities in MA 10 was considered by the IDT. No harvest would occur in MA 10, which includes units 6 and 14. Also in this alternative, design criteria would require that existing cavity habitat be retained, where possible, while providing a safe working environment by leaving stable reserve trees, singularly or in clumps within the units, and leaving safe reserve trees (green trees) within the hazard area of an unstable reserve tree or snag to isolate workers from exposure to the hazard tree. This approach would not meet the purpose and need for treatment and would not be compatible with the intermediate harvest prescription and underburning. It was also noted that the snag analysis took into account that the underburning has the potential to result in 10% mortality of the residual trees, which would replace snags that were felled for operational safety reasons.

Specialists on the ID team considered other issues while developing the alternatives. Effectiveness of fuel reduction efforts to protect structures adjacent to the project area was an issue that was raised by the public. The fuels reduction activities for the project were developed to address accelerated accumulation of woody fuels related to the mountain pine beetle mortality and the relative absence of fire that has led to increased potential for crown level fires which could result in the loss of environmental values on NFS lands such as forest cover, soil productivity, water quality and visual quality. There are structures on the private lands adjacent to the project area, but protecting them is not the primary reason for the fuel treatments.

2. The Selected Alternative

2.1 The Decision

After considering public comment, the analyses documented in the Revised EA, the project record, comments received, and the finding of no significant impact (FONSI – Appendix B), I have decided that Alternative 2 (Proposed Action and Preferred Alternative) will be effective at meeting the stated purpose and need in the Spring Gulch Project Area while addressing concerns brought forward through the public involvement process. Therefore I am selecting Alternative 2, as summarized in Table 1, below. Appendix A provides details of Specific Design Criteria for the Selected Alternative.

Selected Alternative Description

The selected actions will utilize timber harvest to reduce timber stand stocking, increase representation of more resilient tree species, and improve future growth, yield and vigor of the treated stands. Timber harvest will produce wood products, including saw timber, pulp logs and other biomass (small trees, tops, and limbs), which all may be removed from the site. Other treatment areas will not include harvest or removal of timber, but rather focuses on slashing of some smaller material to facilitate use of prescribed fire. Details of the proposed action are described below (Summarized in Table 1 and Figure 1).

Mechanical Removal of Sawtimber

Removal of saw timber-sized trees is proposed to modify stand density, and alter species composition. All timber harvest will leave snags, live green trees, coarse woody material, and desirable hardwoods. Logging systems will include tractor and skyline yarding systems. Where access is available and slopes are generally less than 35-40 percent slope, tractor yarding will be used. Where slopes exceed 35-40 percent and road access is available, skyline yarding systems will be used. Timber harvest treatments will remove approximately 2.6 MMBF (million board feet) of sawlog size material and approximately 875 MBF (thousand board feet) of pulp and top wood material.

To accomplish desired conditions, the following treatment methods are proposed:

Precommercial Thinning

Thinning of smaller, sub-merchantable trees (precommercial thinning) will take place on 66 acres of older harvest units that regenerated in 1966 (Unit 15). This thinning will be done using chain saws and will not require off-road heavy equipment. Smaller, less-desirable trees (grand fir, Douglas-fir, and other shade-tolerant species) will be cut, leaving superior trees to occupy the tallest canopy layers, and maintain a fully stocked stand. Slash treatment will be accomplished by hand piling and burning of the piles.

Intermediate Harvest- Improvement Cut

Approximately 166 acres in ten harvest units (Units 1A, 2A, 3, 4, 5, 6, 7, 7A, 8, 9 & 14) will be harvested to increase the distance between dominant tree crowns, thereby reducing the overall stocking level within the targeted stands. Improvement Cuts will be used to increase the spacing between tree canopies, to reduce the probability of crown-to-crown fire movement. Harvest will remove trees primarily from the lower and intermediate canopy level that are generally composed of shade tolerant species. Healthy western larch and ponderosa pine, considered fire and insect/disease-

resistant species, and western white pine will be favored for retention where ever they are found in the units. Target basal areas (a measure of stand density or crowding) after treatment will range between 60 to 80 square feet of basal area per acre, and emphasis will be placed on retaining larger, healthier trees. Small open patches with less basal area will be retained in areas of concentrated dead lodgepole pine to avoid creating openings in the treated units. In certain areas where numerous fire resilient tree species or trees larger than 20 inches dbh occur, more than 80 square feet of basal area per acre will also be retained. In addition, some of the smaller, "understory" trees will be removed from these areas to reduce the "ladder" fuel component, decreasing the chance that a ground fire could travel from the forest floor up into the tree canopy. Improvement cuts will create spaces between crowns of desirable leave trees, lowering the risk of active crown fire. Intermediate harvest also reduces competition within forest stands, increases residual tree growth and vigor, and helps create stands with species compositions and structures that are more ecologically resilient to potential disturbances.

Approximately 50 of these harvested acres will be mechanically piled and jackpot burned post-treatment, when conditions are conducive to meeting fuel reduction goals. Jackpot burning of concentrated accumulations of fuel will be done in conjunction with mechanical piling as needed.

Shelterwood with Reserves

Units 1, 2 and 12A will be treated with shelterwood with reserve treatments. This is proposed where there are enough trees of desirable size or species in good health and vigor to contribute as a viable seed source or meet other resource values such as aesthetics, hydrology, and wildlife. More than 10 trees per acre will be retained, averaging greater than 40 square feet of basal area throughout the stand. The shelterwood area may have a clumpy distribution because groups of trees rather than solitary trees will be left scattered throughout the stands. Trees of other species that have signs of insect and disease will be harvested. Favored species to leave are western larch and ponderosa pine, and larger healthy Douglas-fir and western white pine. Reserves will be of larger diameter trees that are an important structural component in existing stands and may function as important wildlife habitat, future snags, and coarse woody debris. Reserve trees are desirable for the duration of new stand development.

Residual slash associated with regeneration harvest will be treated by excavator piling and burning on 51 acres. These activities will be in conjunction with jackpot burning of natural fuels and prescribed underburning on 41 acres.

Reforestation/ Planting

After completion of timber harvest and slash/fuel treatments, the above regeneration harvest stands will be planted with site-appropriate, tree seedlings. These species include fire, disease, and insect-resistant species suited to the site; such as larch, ponderosa pine, and western white pine. Planting of these species will help increase diversity and the long-term resilience of the initiating forest stands.

Slash Sub-Merchantable and Underburn of Natural Fuels

Approximately 231 acres of forest stands (Units 300, 301, 302, & 303) will be treated with slashing of submerchantable material and use of prescribed fire for underburning. Trees less than 7 inches diameter breast height (dbh) will be felled using chainsaws; reducing the vertical continuity of fuels and preventing flames from reaching the crowns of the dominant and co-dominant trees. The felled sub-merchantable trees will contribute to the continuity of ground fuels so that a prescribed surface fire will continue its burn pattern under the mature canopy. Along with overall fuel reduction, the

prescribed underburning will result in a reduced fuel load of small, flashy fuels. Nutrients will be released into the soil that aid in successful re-vegetation and regeneration of seedlings, grasses, shrubs and forbs, as well as enhance wildlife forage. Some trees greater than 7 inches in dbh may be slashed if they are dead or dying, especially if they are adjacent to more desirable tree species such as ponderosa pine and western larch. These trees may increase the crown torching potential if they are not felled. An incidental amount of standing trees may die as a result of the underburning or from marginal environmental conditions.

The prescribed burning operations will be conducted under strict environmental conditions allowing the fire to burn uniformly and at a low severity or lower mixed severity to primarily keep flame containment to the surface fuels and lower canopy. The result should reduce surface fuels, stimulate and initiate grasses, forbs and shrub regeneration, and enhance wildlife forage. Fire-related mortality of dominate and co-dominate trees is anticipated to be 10 percent or less.

Proposed Road Work

To facilitate harvesting and associated activities, approximately 9 miles of existing NFS roads will be reconstructed to meet State BMP standards, including replacement and installation of drain dips and culverts, constructing or cleaning catch-basins, blading, buttressing cut-slopes and fill-slopes, and/or resurfacing as needed on a site specific basis. This work is designed to reduce sediment sources and to allow for safe timber transport.

Management Area 10 Forest Plan amendment

My decision includes a project-specific Forest Plan amendment to allow a temporary reduction in cavity habitat in Management Area 10 – Big Game Winter Range (Appendix C, and Project File). Safety regulations require the felling of certain types of snags in work areas, considered to be safety hazards to protect the lives and safety of forest workers. This reality is in conflict with Forest Plan MA-10 standards that do not allow any reduction in cavity nesting habitat. To implement the proposed activities, approval to allow some incidental removal of snags during harvest operations is granted by this amendment, as any timber harvest operation has the potential to temporarily reduce the amount of standing snags, with a subsequent reduction in cavity habitat. Any snags felled for safety reasons will be required to be retained on the site.

Table 1: Selected Alternative Activities Summary

SUMMARY TABLE OF THE PROPOSED ACTION	
Vegetation Management:	**322 acres**
Regeneration Harvest	90 acres
- Shelterwood (90 acres)	
Intermediate Harvest (Improvement Cut)	166 acres
Precommercial Thinning	66 acres
Fuel Treatments:	**553 acres**
Underburn to reduce activity fuel loadings	155 acres
Burning of Natural fuels	229 acres
Machine Piling of activity fuels	101 acres
Slash and Hand Piling	68 acres
Underburning in Inventoried Roadless Areas	0 acres
Road Management:	**9 linear miles**
Road Reconstruction/BMP's	8.84 Miles
New Road Construction	0 Miles
Temporary Road Construction	0 Miles
Logging Systems	**256 acres**
Tractor	101 Acres
Skyline	155 Acres
Vegetation Mgmt Management Area Summary	**322 acres**
MA-5	182 acres
MA-10	21 acres
MA-11	43 acres
MA-18	76 acres
Natural Fuels Prescribed Burning by Management Area	**231 acres**
MA-5	12 acres
MA-10	111 acres
MA-11	13 acres
MA-18	95 acres

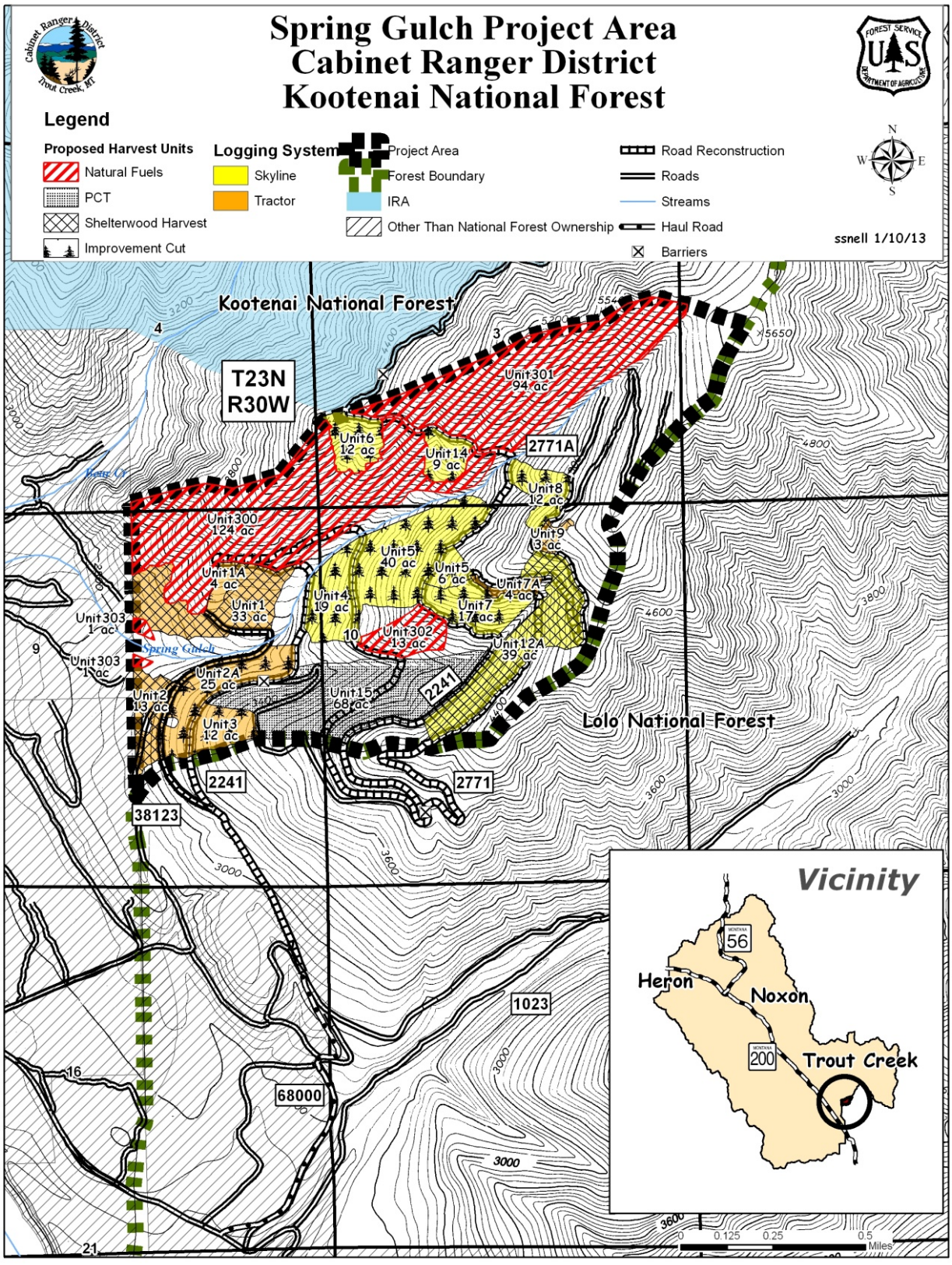

Figure 1: Spring Gulch Timber Sale Project Selected Alternative Map

2.3 Rationale for the Decision

My criteria for making a decision on the Spring Gulch Timber Sale Project was based on: 1) how well the alternatives addressed the purpose and need for the project; and 2) how the alternatives considered the issues that were raised during the initial scoping process, the comment periods, and at other times in which the public was involved in project development. As the decision maker, I weighed all potential benefits of the alternatives against their possible impacts and considered the suggestions and concerns from the public. The *Finding of No Significant Impact* detailed below supported the use of an EA as the appropriate level of NEPA analysis. I considered Forest Plan standards and guidance for the project area, and took into account competing interests and values of the public. I believe Alternative 2 is the best course of action. It reflects common interest in addressing vegetation management and fuels reduction needs in the project area and the associated wildland urban interface; it moves us toward the desired condition. My decision seeks to balance the risks associated with divergent views on acres treated, and treatment prescriptions.

Meeting the Purpose and Need

The purpose and need for action and desired conditions for the Spring Gulch Timber Sale project area are based on Forest Plan goals, objectives, and standards. The Forest Plan and the process used to develop it represent an agreement among a variety of individuals, organizations, agencies and Indian tribes on the management and use of the Kootenai National Forest. It is a negotiated understanding with the public. I view achieving the desired conditions described by the Forest Plan for this area as a decision goal. I believe the Selected Alternative best meets the purpose and need while also being responsive to the issues identified through public involvement.

I believe my decision will improve forest stand conditions related to Forest Plan objectives for vegetative structure and species composition. These actions will create more long-term, sustainable forest conditions by improving overall stand health. Growing space, individual tree vigor, and the ability to withstand pests and pathogens will be improved in the treated forest stands. Likewise, better opportunities for ponderosa pine and western larch regeneration will result from the creation of more open stand conditions. These tree species are fire-adapted and more insect/disease resistant, but are currently not as well represented on the sites. Future stands that contain more ponderosa pine and western larch will be better adapted to survive insect, disease, and wildland fire damage. Changes to species and structure composition will also allow for some stands to achieve old growth conditions sooner than if no treatments were to take place.

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

My decision will reduce fuel levels on approximately 553 acres. Some of the trees will be removed for commercial uses while the leftover branches, foliage, and smaller-sized tree boles will be burned or otherwise treated. Trees will be removed that most contribute to ladder fuels and continuous forest canopy cover; the largest trees of more fire-tolerant species will not be removed. Ladder fuels provide an avenue for a fire to move from the ground to the forest canopy. Once a fire gets into a dense forest canopy it becomes a crown fire and is capable of spreading rapidly through the tree tops

if high-risk weather patterns develop. Crown fires also tend to cause spotting and firebrands ahead of the main fire, increasing the potential for large fire growth.

I am aware of the research conducted by Jack Cohen concerning reducing wildland fire threats to homes in the wildland/urban interface area. The IDT considered the implications of this report addressed specific public comments in Appendix D of this DN. I believe that the actions I am authorizing with this decision, coupled with fuel reduction and other efforts on state and private property, will reduce potential fire intensities, improve the opportunity for wildland fire suppression, and lessen the potential for wildland fires on federal land to spread to private property.

My decision will also begin the process of shifting the cover/forage ratio toward one more suitable for elk with no permanent reduction in security, and have a positive effect on the growth of forage plants important to grizzly bears. Reduced tree stocking levels and retention of large diameter fire-resistant trees will, over time, improve mature forest conditions in the project area.

My decision will provide approximately 3.4 million board feet of wood products as a result of the vegetation and fuels treatments. This output from project implementation is important to me as it is a component of the Forest Plan direction for the area and contributes positively to the social and economic environment of the local community. Also important is the economic impact afforded by this project to the service industries that are either directly or indirectly responsible for accomplishing all the activities. This was clearly important to our local publics and county officials that commented on the project.

Consideration of the Issues

Public comments were received during the scoping process and in response to the original and revised EA. Scoping comments were used to identify the issues that are detailed in Chapter 2 of the Revised EA. Responses to public comments on the Revised EA are included with this decision. Key issues with the proposed action were: harvesting in unroaded areas, harvesting in unsuitable management areas, impacts to grizzly bears from road use, old growth protection and development , fire risk reduction, soil erosion and sediment, detrimental soil disturbance, and climate change.

Inventoried Roadless (IRA) and Unroaded Areas: I recognize that the Inventoried Roadless Areas (IRAs) are important to the public, especially in terms of their high ecological value**.**. The Cataract IRA #665 was validated in 1998. At that time, the size of the Cataract IRA was approximately 17,700 acres. The roadless area was generally expanded to follow existing roads and harvest units. The re-delineation also located the boundary on logical topographical features to provide manageability of the area. The Cataract IRA #665 is now 25,440 acres. No treatment will occur under the Spring Gulch Timber Sale project in IRAs. The Travel Analysis for the Spring Gulch project area confirmed the present and future need for the existing National Forest System roads in the project area. I considered the option of dropping harvest treatment in the two units inside the unroaded area immediately adjacent to the Cataract Creek IRA, but decided that thinning and natural fuels burning were needed, and that these actions would not foreclose future options for the area. Although harvest would have some short-term impacts to the natural and undeveloped attributes of the area (increased evidence of stumps and saw cuts and trails with crushed ground vegetation associated from the harvest and fuels treatments), these are not permanent effects and there would be no change from the existing condition regarding attributes related to the opportunity for solitude or primitive and unconfined recreation. Over time, the appearance would improve as vegetation and other natural processes reduce the evidence of harvest related ground disturbance. In addition, I have carefully evaluated the actions in unroaded areas in light of ongoing development of long term roadless policy and the 2001 Roadless Conservation rule. The planned improvement harvest in unroaded areas would not likely change how the area would be considered, or not considered, for wilderness designation in the future (revised EA pages 3-210-211).

Logging in Unsuitable Management Areas: Concern was express that logging within land classified as "unsuitable" would violate the Forest Plan. The Forest Plan identified MA-5, MA-10, and MA-18 as unsuitable for timber production, but the standards permit harvest to improve wildlife habitat or minimize the spread of insects or disease. Providing for forest resiliency is the primary objective for treatment in these unsuitable MAs. The Regional Entomologist and Pathologist, as well as the Forest Silviculturist visited the Spring Gulch project area and determined that the vegetative treatment was needed to help minimize further loss of trees to insects and disease. Units in MA 10 will help also improve winter range forage (revised EA, page 3-75). In MA 5 and MA 18 harvests are permitted to take place for preventing the spread of insects and disease (revised EA, pages 1- 8 to 9, 3-35).

Impacts to Grizzly Bears from Road Use: Concern was expressed from the public that the road reconstruction planned under Alternative 2 would improve motorized access on roads not presently accessible. Habitat components that are regulated within the Bear Management Unit 8 will see some slight decrease for the life of the project but return to previous levels at the close of management activities (revised EA, 3- 107 to 109). During project activities, FSR #2771 and #38123 will be gated and open only to administrative and contractor use. At no point would the roads be open to motorized access by the public, so a pattern of public use will not be established. Upon completion of project related activities, the roads would be closed to all motorized use; an earthen berm or gate (depending on existing road access designations) would be installed to discourage unauthorized use. As with all road closures, this specific closure would be monitored for illegal motorized use and appropriate law enforcement action taken.

Old Growth Habitat: The Selected Alternative does not include any road construction, vegetation management or fuel treatments within designated old growth or replacement old growth, or in known or suspected old growth timber stands. Compartment 733 was validated and there were no additional stands recommended for old growth or replacement old growth within the project area (revised EA page 3-59). I heard from some of our public that in some units proposed for logging, the forest was "fairly mature, with many large trees, making them good candidates for future old growth designation." The selected alternative effectively deals with the underlying issue of the sustainability of this important ecological component. By reducing stand density, retaining old growth stand components and younger desirable trees followed by the use of prescribed fire, stands will be moved to a condition more representative of historic conditions. Timber harvest will release the ponderosa pine and western larch and help to maintain their vigor and long term presence on the site. The use of prescribed fire will return fire-related processes to these ecosystems which have developed under frequent underburns. I have selected Alternative 2 because it will maintain designated old growth and enhance mature forest conditions in other areas. I have determined that this action will help maintain adequate old growth for dependent species (revised EA page 3-80).

Fire Risk Reduction: Effectiveness of fuel reduction efforts to protect structures adjacent to the project area was an issue that was raised by the public. The fuels reduction activities for the project were developed to address accelerated accumulation of woody fuels related to the mountain pine beetle mortality and the relative absence of fire that has led to increased potential for crown level fires which could result in the loss of environmental values on NFS lands such as forest cover, soil productivity, water quality and visual quality. There are structures on the private lands adjacent to the project area but protecting them is not the primary reason for the fuel treatments. The actions under the selected alternative will trend the Spring Gulch project area landscape toward a more fire resilient condition by reducing surface fuels, ladder fuels, and crown bulk density (revised EA page 3-49).

Water Quality, Soil Erosion and Sediment: Design criteria (Appendix A) are incorporated into the selected alternative to address watershed concerns. These design features were developed to reduce impacts to the

aquatic environment, maintain beneficial uses and protect long-term watershed productivity (revised EA, pages 3-144, 3-150). No harvest will occur within any riparian habitat conservation area (RCHA), no new point sources of discharge will be created, and the watershed condition will remain relatively unchanged (revised EA, page 150). The No-Action Alternative would exacerbate the negative effects to the watershed resulting from the next stand-replacing fire through increased downed and dead fuel loadings. My decision to implement the selected alternative will not degrade habitat for the bull trout or westslope cutthroat trout. Neither of these species is present in waters that may be affected by the project. The selected alternative will maintain current aquatic conditions.

Soil Productivity: The project soils analysis found that the amount of cumulative detrimental soil disturbance (DSD) is below the regional guideline of 15% (EA pages 3-184 to 3-197) is consistent with the goals, objectives, and standards for soil and water resources. Overall, 92% of the vegetation management activity units in Spring Gulch will be at 8% DSD or lower. Two units, for 21 acres (1A and 2) or 8 % of the units will be 11%-15% DSD. Through project design criteria, planned activities will maintain long-term soil productivity (revised EA page 3-196).

Climate Change: A comment received on the Revised EA suggested that forest management should shift from logging to carbon storage. Management of the National Forest System does not emphasize "logging." Rather, management of all National Forests, including the Kootenai National Forest, emphasizes multiple-use as prescribed by the Multiple-Use Sustained-Yield Act of 1960 and the National Forest Management Act. Accomplishment of these statutory objectives is defined in the forest plan for Kootenai National Forest. Neither the principal statutes nor the Kootenai Forest Plan require or suggest that carbon storage supersede the statutorily defined purposes of national forest management.

Although not a statutorily defined purpose of National Forest System management, forests provide a valuable ecosystem service by removing carbon from the atmosphere and storing it in biomass. The Kootenai National Forest currently stores an estimated 171.1 (± 3.9) million metric tons (Mt) of carbon. Preliminary estimates indicate that the Kootenai National forest is a net carbon sink, removing from the atmosphere approximately 31 metric tons of carbon per acre per year. This represents about 0.004 percent of the total of approximately 42,654 Mt of carbon in forests of the coterminous United States (USEPA 2008).

Sustaining forest productivity and other multiple-use goods and services requires that land managers balance multiple objectives. The long-term ability of forests to sequester carbon depends in part on their resilience to multiple stresses, including increasing probability of drought stress, high severity fires and large scale insect outbreaks associated with projected climate change. Management actions, such as those in the Spring Gulch Timber Sale project that maintain the vigor and long-term productivity of forests, reduce the likelihood of high severity fires and insect outbreaks, and store carbon in harvested wood products, increase the capacity of the forest to sequester carbon in the long-term. Thus, even though some management actions may in the near-term reduce total carbon stored below current levels, in the long-term they improve the overall capacity of the forest to sequester carbon, while also contributing other multiple-use goods and services.

Why I did not select the No Action Alternative

Let me compare the selected alternative with the no action alternative, further highlighting my rationale, beginning with an evaluation the implications of taking no actions to address the purpose and need at this time:

Alternative 1, the No Action Alternative, would not propose any management response to the stated purpose and need statements for the project area. I did not select this Alternative because:

- There is an increasing risk of wildfire threat to national forest resource values in response to fuel conditions and Alternative 1 does nothing to reduce this risk. In contrast, Alternative 2 moves the area toward a patchwork of age classes, including some openings, and a more resilient mix of tree species that will alter fire behavior and reduce crown fire risks to adjacent private lands, water quality, wildlife habitat and aesthetic values.

- It does not pro-actively address the need to trend the area toward a species mix that is more resilient and less susceptible to endemic change agents in the area such as root disease and the mountain pine beetle, which are currently impacting the area.

- The selected alternative can be implemented to address the stated purpose and need with negligible to no adverse effects to other resource values.

It is clear to me that the No Action Alternative would postpone taking any action to address the stated purpose and need for the project. In contrast, the selected alternative (Alternative 2) proposes management actions in response to the stated purpose and need (revised EA Chapter 2). The actions are consistent with management direction for the area, including that contained in the Forest Plan and the Sanders County Community Fire Protection Plan.

3. Findings and Consistency with Laws, Regulations and Policy

The Spring Gulch Timber Sale Project Revised EA addressed the regulatory framework and regulatory consistency by resource area. I have determined that my reaffirmed decision is consistent with the laws, regulations and policies related to this project. The analysis leading to my reaffirmed decision was developed within the framework of the following laws, regulations, and policies:

3.1 The National Forest Management Act (NFMA) (16 USC 1604)

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 Kootenai National Forest, as the 1987 Kootenai 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).

1. Best Available Science

My conclusion is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. Throughout Chapter 3 each specialist on the Interdisciplinary Team focused on use of the best science available to their resource field, as reflected in the analysis documentation. The manner in which best available science is addressed can be found within the Response to Comments, Biological Assessment, and the project file. Appendix C of the revised EA includes an extensive list of referenced literature and these references are included in the project file. Reference citations are found throughout the revised EA, indicating how the analysis is tiered to relevant science.

2. Consistency with the Kootenai Forest Plan

The Kootenai National Forest Land and Resource Management Plan of 1987 (Forest Plan) establishes management direction for the Kootenai National Forest. This management direction is achieved through the establishment of Forest-wide goals and objectives, standards and guidelines. Additional goals and accompanying standards and guidelines have been established for specific management areas (MAs) across the Forest. Project implementation consistent with this direction is the process in which desired conditions described by the Forest Plan are achieved. The NFMA requires that all project-level resource plans, such as this decision notice, are to be consistent with the Forest Plan (16 USC 1604(i)). The revised EA documents the Forest Plan and MA goals and objectives and the standards and guidelines applicable to the project area (revised EA, Ch. 1). The alternative development process is detailed in Chapter 2 of the revised EA, while the management goals of the alternatives and the environmental consequences of the alternatives in relation to the Forest Plan standards and guidelines are described in Chapter 3 of the revised EA.

The revised EA includes a complete evaluation of MA standard and guidelines (revised EA, Chapter 1, p. 8-9), and all activities associated with this project are consistent with the Forest Plan. Harvest treatment areas are within Management Areas (MA) 5, 10, 11, and 18 (revised EA, Chapter 1, p. 8-9), and all treatments are appropriate and are within the timber and vegetation practices outlined in the Forest Plan (revised EA, Chapter 3, p. 33-35, Vegetation Specialist Report).

Forest Plan Amendment: The Forest Plan states "If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for that project". This decision includes a project-specific amendment to the Forest Plan for Management Area 10, Big Game Winter Range (appendix C) to allow short term incidental reduction in snag habitat due to potential felling of individual snags in the harvest unit to help ensure the safety of forest workers during harvest operations. Our determination of whether this amendment is significant was determined based on the process in the Forest Service Land Management Planning Handbook, Section 1926.51. I have determined that this is a non-significant project specific amendment because additional snags of suitable species and size will be created over time as a result of logging damage, burning, and natural mortality; less than 1% of the total MA 10 allocation on the Kootenai National Forest will be affected; because the goal of this MA (maintain or enhance habitat effectiveness for winter use by big game species) cannot be achieved in the planning area without this action; and thinning of the understory would reduce the amount of ladder fuels present and lower the possibility of crown level wildfires. With the inclusion of this amendment, this project is consistent with Forest Plan management direction.

Grizzly Bears: The Spring Gulch Timber Sale project is in the Cabinet-Yaak grizzly bear recovery zone. The selected alternative meets the Forest Plan standards, as well as terms and conditions of applicable biological opinions in BMU 8 since the six recovery objectives are met. The project is consistent with the compliance strategy for the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (2011). There will be no net increase in open motorized route density (OMRD), and total motorized route density (TMRD) requirements. BMU 8 core is not affected by the project. Written concurrence was received on May 25, 2011 from the U.S. Fish and Wildlife Service on the determinations reached in the revised Biological Assessment (BA) for the project. Habitat effectiveness is maintained throughout the life of the project. The project analysis found that the selected alternative *may affect, but is not likely to adversely affect* the grizzly bear. (See revised EA pages 3- 114 to 3-116, and the USFWS Consultation section in the project file). There would be no change in access management, habitat parameter levels would be maintained throughout the life of the project. Public use would not be

allowed on restricted roads, and roads temporarily opened for administrative traffic would return to the current access management status post-project (revised EA pages 3-114-115). The existing core areas provide displacement habitat for on-going projects. Alternative 2 will not cause additional incidental take because OMRD, TMRD, and core standards are met in BMU 8 (revised EA page 3-113).

The selected alternative is designed to address insect and disease problems and improve foraging habitat for big game and grizzly bears. Treatments include regeneration, thinning, prescribed fire, and precommercial thinning. Opening up these stands will permit more light to reach the ground and reduce competition for existing nutrients. This will result in the rejuvenation of grasses and forbs in the units, important forage species for grizzly bears and deer and elk. An existing barriered road will be opened to access the upper portion of the treatment area and an existing road template will be reconstructed into the lower end of the treatment area. Upon completion of the project both roads will be returned to their pre-project condition, the upper road will be barriered and the lower road will be ripped and seeded (Biological Assessment page 4).

The relationship of this project to increased recreational use of the area centers on the potential for illegal shooting of grizzlies. It is reasonable to assume that loss of cover from this project coupled with increased recreational use may increase mortality risk. The rate of increase in recreation in the area has been modest thus far. By the time there is a noticeable increase in recreationists the harvest units treated under this project will have recovered and will likely provide security cover (Biological Assessment page 15).

Old Growth: The selected alternative maintains 14% of designated old growth in the Spring Gulch planning subunit (revised EA, page 3- 61), well distributed across dominate habitat types of suitable National Forest acres below 5,500 feet elevation. There are no mechanical treatments proposed in designated effective or replacement old growth under the selected alternative. There is no use of prescribed fire in any designated old growth. There are no treatments adjacent to designated old growth. As documented in this decision, activities will maintain existing old growth conditions.

The selected alternative would maintain a sufficient amount and distribution of old growth forest habitat as directed by the Kootenai Forest Plan. The Forest Plan Monitoring and Evaluation Report for FY 2011 (Monitoring Report-USDA Forest Service, 2012) documents the forest-wide status of old growth. Two different data sources are used to evaluate the amount of old growth forest-wide: 1) the Forest Inventory and Analysis (FIA) provides a congressionally mandated, statistically-based, continuous inventory of the forest resources of the United States. The FIA data provides a statistically sound representative sample designed to provide unbiased estimates of forest conditions at large and medium scales. This inventory design is appropriate for making estimates of old growth percentages at the scale of a national forest and 2) stand-level old growth inventory that is aggregated and summarized at the Forest scale. Forest-wide analysis of old growth, which is disclosed in the FY 2011 Monitoring Report, concludes that at least 10% of the KNF below 5,500 feet is managed as old growth as required in the Forest Plan. Specifically, this report discloses that old growth or replacement old growth on the KNF totals 299,294 acres or 16% of acres below 5,500 feet based on the stand-level data (EA, Chapter 3, p. 61). Of this 16% of old growth or replacement old growth on the Forest, 10.8% of acres below 5,500 feet were determined to be effective old growth. As described in the Monitoring Report, the FIA data is summarized forest-wide and does not measure old growth based on the criteria in the Forest Plan. The FIA data estimates effective old growth forest-wide at 9.0% of the Forest, with a 90% confidence interval of 7.2% to 10.9%. The acres of old growth from the stand-level inventory are just within the confidence interval for the FIA data.

The selected alternative will continue to provide viable habitat for old growth dependent species within the analysis area and would maintain old growth viability across the Forest. The selected alternative meets Forest Plan direction for management indicator species associated with old growth habitat. Adhering to Forest Plan direction in the form of goals, objectives, standards, and monitoring will provide for the needs of old growth-associated species. Considering this project, along with other proposed and foreseeable analyses across the Forest within undesignated and designated old growth, old growth would be maintained above the 10% standard specified in the Forest Plan. Project-specific information is on file at district and supervisor offices on the Forest. Cumulatively, since the Spring Gulch Timber Sale project has no proposed activities in undesignated and designated old growth, there will be no change in the amount and distribution of old growth across the Forest as a result of this project. After reviewing the EA, I find that my decision is consistent with Forest Plan standards, goals, and objectives as amended.

3. Wildlife Diversity

The NFMA directs the Forest Service to provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan." (16 USC 1604(g)(3)(B)). One of the goals of the Forest Plan is to maintain diverse age classes of vegetation for viable populations of all existing native, vertebrate, wildlife species, including old-growth timber in sufficient quality and quantity to maintain viable populations of old-growth dependent species and to maintain habitat diversity representative of existing conditions. (FP Vol. 1, page II-1) Based on my review of the wildlife Biological Assessment and Biological Evaluation for the Spring Gulch Timber Sale Project (located in the project file), I conclude that my decision provides for the diversity of plant and animal communities in the project area.

4. Sensitive Species

Federal law and direction applicable to sensitive species include NFMA and the Forest Service Manual (2670). The Regional Forester has approved a list of sensitive plants and animals for which population viability is a concern. In making my decision, I considered the effects on all sensitive species listed as possibly occurring on the KNF and have reviewed and analyzed the projected effects on all sensitive species which may possibly occur in the analysis area (revised EA chapter 3, Finding of no Significant Impact (FONSI) and project file). Sensitive species determinations are displayed in Table 5. I concur with the findings documented in the revised EA and biological evaluation for these species.

The wolverine is now a proposed threatened species, per the findings of the USDI Fish and Wildlife Service, 50 CFR Part 17 , 78 FR 7864, Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States, dated February 4, 2013, found at http://federalregister.gov/a/2013-01478. Wolverines are not suspected to occur within the Spring Gulch project area, because suitable denning habitat does not occur and there have been no reported sightings in the area. Based on the science presented in the rule, I do not expect our actions under the Spring Gulch Timber Sale project to rise to a level that would constitute a jeopardy finding, which is consistent with the findings of the proposed rule, which states: *"Wolverines are not thought to be dependent on specific vegetation or habitat features that might be manipulated by land management activities, nor is there evidence to suggest that land management activities are a threat to the conservation of the species. The available scientific and commercial information does not indicate that other potential stressors such as land*

management, recreation, infrastructure development, and transportation corridors pose a threat to the DPS."

Table 5 - Sensitive Species Determinations

Species	Determination	Revised EA, page reference
Bald Eagle	No impact – no suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Black Backed Woodpecker	No impact – no suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Coeur D'Alene Salamander	No impact – no suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Common Loon	No impact – no suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Fisher	No impact – no suspected of occurring in the project area and dropped from further analysis.	pp. 3-82
Flammulated Owl	May impact individuals or their habitat, but will not likely result in a trend toward federal listing (temporary displacement of individuals may occur during periods of activity, 3% of potential habitat would become unsuitable, and 22% of potential habitat would be improved.	pp. 3-83
Gray Wolf	May impact individuals or their habitat, but will not likely result in a trend toward federal listing or reduced viability. Mortality risk to the wolf is not expected to measurably increase. Alternatives will not affect known denning/rendezvous sites. There may be short-term avoidance of areas of activity, however transient use could still continue.	pp. 3-87
Harlequin Duck	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Northern Bog Lemming	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Northern Leopard Frog	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Peregrine Flacon	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Townsend's Big- eared Bat	May impact individuals or their habitat, but will not likely result in a trend toward federal listing (potential to displace individuals during periods of activity, potential for incidental mortality of a bat during timber felling if it is present in/on the tree, no impact to maternity sites or common roosting sites, and suitable habitat remains in the project area.	Pp. 3-90
Western Toad	May impact individuals or their habitat, but will not likely result in a trend toward federal listing (potential for direct mortality of individual toads due to felling of trees or fire, localized removal of coarse woody debris, no impact to breeding habitat, suitable habitat available outside of project area, and retention of riparian corridors).	pp. 3-93
Wolverine	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Bighorn Sheep	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-81
Westslope Cutthroat Trout	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-158
Western pearl shell mussel	No impact – not suspected of occurring in the project area and dropped from further analysis.	pp. 3-159
Region 1 listed Sensitive Plants known or suspected to occur in project area	May impact individuals or their habitat, but will not likely result in a trend toward federal listing (none located within proposed treatment areas, and provisions would be in place in the sale contract to protect any sensitive plant species discovered during any phase of implementation).	pp. 3-230

5. Suitability for Timber Production

The NFMA directs that no timber harvesting shall occur on lands classified as not suited for timber production except for salvage sales, sales necessary to protect multiple-use values, or activities that meet other objectives on such lands if the forest plan establishes that such actions are appropriate [16 U.S.C. 1604 (g)(3)(E)]. Compliance with Forest Plan direction for harvesting timber on unsuitable MAs is addressed in the revised EA (Chapter 3, pp. 35), and this analysis clearly demonstrates compliance with these objectives.

- **Soil, slope, or other watershed conditions will not be irreversibly damaged (16 USC 1604(g)(3)(E)(i)).** My decision avoids permanent impairment of site productivity (revised EA, Chapter 3, pp. 183-193). This determination is supported by the effects disclosures in the revised EA (Ch. 3, pp. 192-197) and through the application of BMPs (revised EA, Appendix B). The project soils analysis found that the amount of cumulative detrimental soil disturbance is expected to be at or below the regional guideline of 15 percent for each of the proposed treatment units (revised EA, Chapter 3, pp. 184-185).

- **There is assurance that the lands can be adequately restocked within five years after final regeneration harvest (16 USC 1604(g)(3)(E)(ii)).** Approximately 90 acres are proposed for regeneration harvest, and these areas will be hand planted. Ninety eight percent of all regeneration harvested stands that have been hand planted on the Cabinet Ranger District have been certified as stocked within five years of final harvest (revised EA, Chapter 3, p 34). Based on this success rate, it is my determination that successful reforestation, either through planting or natural regeneration, can be assured within five years, as required.

- **Streams, stream-banks, shorelines, lakes, wetlands, and other bodies of water are protected from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment where harvests are likely to seriously and adversely affect water conditions or fish habitat (16 USC 1604(g)(3)(E)(iii)).** The selected alternative meets all Forest Plan standards as amended by the Inland Native Fish Strategy (INFS) (revised EA, Chapter 3, pp. 167).

- **The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber (16 USC 1604(g)(3)(E)(iv)).** My decision to implement the Spring Gulch Project is based on a variety of reasons as discussed elsewhere in this Decision Notice. Economics was only one of the many factors I considered in making my decision; the decision is not based primarily on the greatest dollar return, but rather it will be responsive to the stated purpose and need for the project.

6. Clearcutting and Even-aged Management (16 USC 1604(g)(3)(F))

When timber is to be harvested using an even-aged management system, a determination that the system is appropriate to meet the objectives and requirements of the Forest Plan must be made. Where clearcutting is to be used, it must be determined to be the optimum harvest method [16 U.S.C. 1604(g)(3)(F)(i)].
Silvicultural site-specific prescriptions for the Spring Gulch Timber Sale Project have been approved by a certified silviculturist. Target stand conditions were developed based on management objectives and site characteristics. The prescriptions considered existing stand conditions, the target stands and resource constraints in determining the biological and technological feasibility of all silvicultural systems and their appropriateness for the site.

I have reviewed the silvicultural information in the project file, along with the site-specific management objectives developed from Forest Plan direction, and I have determined that the management practices described in the Forest Vegetation section of the revised EA are appropriate methods to achieve the multiple resource objectives on the sites selected for harvest.

- **The interdisciplinary review has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts have been assessed, as well as the consistency of the sale with the multiple use of the general area (16 USC 1604(g)(3)(F)(ii)).** As displayed in the revised EA, environmental analyses were completed by an interdisciplinary team (Chapter 3). I have determined that the project is consistent with the multiple use objectives of the general area.

- **Cut blocks, patches or strips are shaped and blended to the extent practicable with the natural terrain (16 USC 1604(g)(3)(F)(iii)).** The selected alternative meets Forest Plan visual quality objectives (VQO's) as discussed in the scenic resource section of the revised EA (Chapter 3, page 197).

- **Cuts are carried out according to the maximum size limit requirements for areas to be cut during one harvest operation (16 USC 1604(g)(3)(F)(iv)).** Regeneration harvest approved by this decision does **not** include openings that exceed 40 acres in size (revised EA Chapter 3, page 110).

- **Timber cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource (16 USC 1604(g)(3)(F)(v)).** As described in the analysis in Chapter 3 of the revised EA, Alternative 2, as selected, is consistent with protection of the resources described. The Standards and Guidelines contained in the Forest Plan are designed to provide the desired effects of management practices on the other resource values.

7. Roads

The NFMA requires that the necessity for roads be documented and that road construction be designed to "standards appropriate for the intended uses, considering safety, cost of transportation and impacts on land and resources" [16 USC 1608]. The NFMA also requires that "all roads are planned and designed to re-establish vegetation cover on the disturbed areas within a reasonable period of time, not to exceed 10 years ...unless the road is determined a necessary permanent addition to the National Forest Transportation System" [16 USC 1608 Sec. 8]. A transportation plan, including a Travel Analysis Process, was completed for this project and is located in the project file.

Management actions associated with this project do not include construction of new permanent roads. Road reconstruction will be completed using BMPs to protect aquatic and soil resources (revised EA, Appendix B). Potential impacts of the selected alternative from reconstruction have been assessed and are displayed in the revised EA, with supporting information in the project file.

3.3 Clean Water Act and Montana State Water Quality Standards

Upon review of the EA and Project Record, I find that activities associated with my decision will comply with State water quality standards (revised EA Chapter 3, p.144). The Clean Water Act requires states to identify water bodies they believe do not meet water quality standards and that are at risk of not supporting their beneficial uses. Once identified, these water bodies are classified as Water Quality Limited Segments (WQLS). Though there are no WQLSs in the project area, Spring Gulch is a tributary to Clark Fork of the Columbia River.

My decision includes project design features to protect the water resource and applicable BMPs (revised EA, Appendix B) to achieve water quality standards. Inland Native Fish Strategy Riparian Habitat Conservation Areas (RHCAs) will be established along all wetlands and stream courses that are in or adjacent to treatment areas.

The Selected Alternative for the Spring Gulch Timber Sale project has been designed to avoid point source discharges through implementation of applicable BMPs at road stream crossings. This required BMP work on the timber haul roads will be implemented to disconnect ditch water from the stream network and is designed to avoid the discharge of storm water into waters of the United States from the roads used for haul on this timber sale. National Pollutant Discharge Elimination System (NPDES) permits are not required for this project.

3.4 Clean Air Act

After reviewing the revised EA and Project Record, I find that the activities to be implemented will be coordinated to meet the requirements of State Implementation Plans, the Smoke Management Plan and Federal air standards (revised EA, Chapter 3, pp. 249).

3.5 Endangered Species Act

Under provisions of this Act, Federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions are not likely to jeopardize the continued existence of any of these species. Upon review of the Biological Assessments for wildlife, plants and fish for the Spring Gulch Timber Sale Project, I find that the project meets the requirements of the Endangered Species Act.

This project complies with the Endangered Species Act consultation requirements. Further details are contained in the biological assessments (revised EA, Appendix D and project file, BA Concurrence Vol. 6, Doc. 3&4).

3.6 Migratory Bird Treaty Act

On January 10, 2001, President Clinton signed an Executive Order outlining responsibilities of Federal agencies to protect migratory birds. Upon review of the wildlife effects analysis included in the EA and the project file, I find that my decision complies with this Executive Order (revised EA Chapter 3, pp. 122-127).

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

Based upon the analysis in the revised EA (Chapter 3, pp. 222-227), and documentation in the Project File, no impact on cultural resources is expected by implementation of this project.

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

The Forest Service has consulted with the Confederated Salish and Kootenai tribes during the analysis process. The intent of this consultation has been to remain informed about Tribal concerns regarding the American Indian Religious Freedom Act and other tribal issues. In addition, the tribes have rights under the Hellgate Treaty of 1855, including hunting, gathering, and grazing rights. I believe that our actions fulfill our trust responsibilities to the Tribes under our government-to-government relationship, and the requirements under the National Historic Preservation Act and other related laws, regulations, and policies.

3.8 Environmental Justice (Executive Order 12898)

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

3.9 Additional Information and Project Implementation

Copies of the Spring Gulch Timber Sale Project Revised EA are available for review at the Cabinet Ranger District Office in Trout Creek, Montana. The supporting Project File, which includes the project development notes, public involvement and the specialists' analyses, is also available at the Cabinet Ranger District Office for review.

The selected alternative will result in timber sale which is planned for advertisement in the summer of 2013. Harvest is expected to be completed by the end of 2018, with slash disposal and reforestation activities completed by the end of 2023. Underburning and precommercial thinning treatments are anticipated to be accomplished by 2023. Typically, BMP work on haul roads will be accomplished prior to hauling of timber products. These dates are tentative, based upon anticipated budgets, work force, weather, and other considerations.

3.10 Review and Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215.11. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the (*Daily Inter Lake*, Kalispell, Montana). It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the *exclusive* means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Paper appeals must be submitted to:

USDA Forest Service, Northern Region
ATTN: Appeal Deciding Officer
P.O. Box 7669
Missoula, MT 59807

Or

USDA Forest Service, Northern Region
ATTN: Appeal Deciding Officer
200 East Broadway
Missoula, MT 59802

Office hours: 7:30 a.m. to 4:00 p.m.

Electronic appeals must be submitted to:

appeals-northern-regional-office@fs.fed.us

Faxed appeals must be submitted to: FAX: (406) 329-3411

In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

It is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why my decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, the appeal must meet the content requirements of 36 CFR 215.14, and include the following information:

- The appellant's name and address, with a telephone number, if available;
- A signature, or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
- When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request;
- The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
- The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, subpart C;

- Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
- Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
- Why the appellant believes the Responsible Official's decision failed to consider the comments; and
- How the appellant believes the decision specifically violates law, regulation, or policy.

If an appeal is received on this project there may be informal resolution meetings and/or conference calls between the Responsible Official and the appellant. These discussions would take place within 15 days after the closing date for filing an appeal. All such meetings are open to the public. If you are interested in attending any informal resolution discussions, please contact the Responsible Official or monitor the following website for postings about current appeals in the Northern Region of the Forest Service: http://www.fs.usda.gov/goto/r1/appeal-meetings"

3.11 Contact Person

For further information on this decision, contact John Gubel, District Ranger, or John Head (Environmental Coordinator), Cabinet Ranger District, 2693 Hwy. 200, Trout Creek, MT 59874, at 406-827-3533.

PAUL BRADFORD
Forest Supervisor

4/15/2013
Date

Appendix A

Specific Design Criteria for Alternative 2

During the design phase of the project various measures were incorporated to lessen potential impacts and to avoid potential resource damage. These measures are detailed in the descriptions below.

• Cultural Resources:

Cultural Resource surveys have been completed for this project. Known sites have been identified. Timber Sale Contract Provision B6.24, Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources, would be included in the timber sale contract. This clause specifies that the Forest Service may modify or cancel the contract to protect cultural resources, regardless of when they are identified.

• Soils:

Soil Compaction: Grapple pile equipment would operate on slopes generally under 35-40% to avoid potential soil disruption. The timing of the activity would also be controlled by the timber sale contract. Any excavated skid trails constructed for harvest operation would be re-contoured after harvest is completed.

Soil Productivity and Nutrient Cycling: Large down-woody material for soil productivity and nutrient recycling would be maintained by the following measures:

a. Down woody retention levels would be maintained to meet the following objectives; in moist forest habitat treatment areas, Graham et al. (1994) recommends retaining 17-33 tons/acre of down woody material greater than 3 inches in diameter; in drier habitat types the recommended retention level is 7-13 tons/acre of down woody material greater than 3 inches in diameter.
b. Prescribed under burning would generally take place in the spring and pile burning in the fall during periods of relatively high soil moisture.

For tractor-yarded Units 1, 1A, 2, 2A, 3, 7A & 9:

a. Ground-based yarding, processing, and harvester equipment would operate on sustained slopes under 35-40%.
b. All skid trails would be agreed upon and designated on the ground by the purchaser and the Forest Service before felling begins. Utilization of existing skid trails would be required, where feasible.
c. Skid trail spacing would average 75 feet or greater, except where the trails converge to landings and as terrain dictates otherwise.
d. Post-harvest, skid trails with ground disturbance would be covered using randomly placed logs (on contour) to reduce run-off, stabilized with water-bars, or a combination thereof.
e. Operating equipment would avoid moist or wet depressions.

For skyline-yarded Units 4, 5, 6, 7, 8, 12A & 14

a. The leading end of logs will be suspended during skyline yarding in haul.

• Noxious Weed Control:

Timber Sale Contract Provision C6.351#, Washing Equipment, would be included in the timber sale contract. This clause specifies all off road vehicles associated with harvest or post-harvest operations to be cleaned and inspected by Forest Service personnel prior to entering the sale area.

Timber Sale Contract Provision C6.27#, Noxious Weed Treatment would be included in the timber sale contract. This clause requires the purchaser to pre-treat haul routes with herbicides to remove seed-bearing noxious weeds.

• Wildlife:

Timber Sale Contract Provision B6.24, Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources would be included in the contract. This clause requires additional protection measures for Threatened, Endangered and Sensitive Species that may be found in the area after the contract is awarded.

Wildlife Tree Retention: Snags and/or live tree snag replacements would be retained where opportunities exist in treatment units, as needed to meet Forest Plan standards and guidelines. All treated areas would meet or exceed Forest Plan standards for snag retention (minimum of one snag/acre). One to two snags per acre and 2-4 live tree snag replacements will be retained, for a total of 3-6 snags/green replacement trees per acre.
The sale administrator would ensure, whenever possible, that the design of skid trails and skyline corridors avoid these desirable trees and snags. Large diameter snags (greater than 16 inches dbh) that are felled for safety reasons would remain on site to provide for large woody debris recruitment and long-term site productivity. High hazard snags and snags in the advanced stages of decay would not be used to meet retention objectives. Retention practices would focus on older and larger ponderosa pine, western larch, and Douglas-fir trees.

Maintain Stand Structure and Habitat for Snag-dependent species: No old-growth stands are proposed for treatment. However, to maintain habitat for snag-dependent species, areas within units that contain small pockets of older, large diameter structure will be thinned from below or not at all. These areas would be managed on a case-by-case basis. The tree marking guide would assure a diversity of snag structure classes and the highest probability of long-term retention.

Retention of Hardwood Trees: To maintain forest species diversity and wildlife habitat, aspen and birch trees would not be harvested. If trees of these species needed to be cut for safety reasons, they would remain on site for course-woody debris and long-term site productivity.

Mechanical Pile: Where mechanical piling is prescribed for post-harvest fuels reduction, leave an occasional slash pile (i.e. 1 per 3 acres) where deemed appropriate by the District Wildlife Biologist, to provide habitat for small forest animals (e.g. snowshoe hares).

No Activity during Spring Bear Season: No operations would occur during the spring bear use period of April 1st until June 16th of each calendar year.

- **Fisheries and Aquatics**

Riparian buffers required by the Inland Native Fish Strategy (INFS) as amended to the Forest Plan in 1995, and these guidelines would be followed under all action alternatives.

Buffer zones for streams, wetlands and other riparian habitat have been included in and adjacent to harvest units as designed by the project fish biologist, hydrologist, botanist and soil scientist utilizing INFS standards and other site-specific recommendations. Treatment area boundaries have been identified to exclude the RHCA (there are no activity units that overlay RHCA areas). RHCA widths are as follows:

a. Fish Bearing Perennial Streams - 300 feet from the edge of both stream channel banks (there are no fish bearing streams near harvest or treatment areas);
b. Non Fish Bearing Perennial Streams – 150 feet from the edge of both stream channel banks;

c. Ponds, Lakes, Reservoirs, Wetlands greater than 1 acre – 150 feet from the edge of the riparian vegetation or seasonally saturated soil;

d. Seasonally flowing or intermittent streams and wetlands less than 1 acre – 50 feet slope distance.

- **Roads and Improvements**

Timber Sale Contract Provision B6.22, Protection of Improvements and B6.23, Protection of Land Survey Monuments would be included in the contract. These clauses would require the purchaser to protect specified improvements, such as roads, fences, and property lines identified on the sale area map.

- **Public Safety**

Timber Sale Contract Provision B6.33, Safety and C6.332, Safety, Timber Hauling would be included in the contract. These clauses require the purchaser to provide adequate signing to warn the public of logging activities and truck hauling.

Table A-1. Alternative 2 – Selected Action Treatment Acres and Volume Estimates

Silvicultural Treatment	Wood Product Volume[1] MBF	Acres	Slash/Fuels Treatment	Acres
Improvement Cut	2,184	166	Excavator Pile/Jackpot Burn	50
			Under Burn	116
Shelterwood Harvest	1,246	90	Excavator Pile/Jackpot Burn	51
			Under Burn	39
Slash/Under burn		229	Slashing and Prescribed Burning	229
Slash/Pile/Burn		2	Hand Pile/Jackpot Burn	2
Pre Commercial Thinning		66	Hand Pile	66
Total Acres		**553**		**553**

[1] volume estimates include sawtimber and non-sawtimber volume (top wood and pulp).

Weed Control

Noxious weed treatments would occur as needed in and around this project area, as authorized by the Kootenai National Forest Invasive Plant Management EIS and related Record of Decision (2007).

Forest Plan Amendment for MA - 10

The selected alternative includes a project-specific Forest Plan amendment to allow a temporary reduction in cavity habitat in Management Area 10- Big Game Winter Range. Any timber harvest operation has the potential to at least temporarily reduce the amount of standing snags, and subsequent reduction in cavity habitat. Safety regulations require the felling of certain types of snags that would be considered as a safety hazard, to protect the safety and lives of forest workers. Snags and/or live tree snag replacements would be retained where opportunities exist in treatment units, as needed to meet Forest Plan standards and guidelines. All treated areas would meet or exceed Forest Plan standards for snag retention (minimum of one snag/acre). One to two snags per acre and 2-4 live tree snag replacements will be retained, for a total of 3-6 snags/green replacement trees per acre.

The sale administrator would ensure, whenever possible, that the design of skid trails and skyline corridors avoid these desirable trees and snags. Large diameter snags (greater than 16 inches dbh) that are felled for safety reasons would remain on site to provide for large woody debris recruitment and long-term site productivity. High hazard snags and snags in the advanced stages of decay would not be used to meet retention objectives. Retention practices would focus on older and larger ponderosa pine, western larch, and Douglas-fir trees.

Spring Gulch Timber Sale Project

Final Finding of No Significant Impact (FONSI)

The Council on Environmental Quality (CEQ) regulations note that when an environmental assessment has been prepared, the responsible official shall review that document and determine whether the proposed action (selected alternative) may have a significant effect on the quality of the human environment and if an environmental impact statement should be prepared (40 CFR 1508.13). I have reviewed the direct, indirect and cumulative effects of the proposed activities documented in the Revised Environmental Assessment for the Spring Gulch Timber Sale Project. I have also reviewed the project record for this analysis and the effects of the proposed action and alternatives as disclosed in the EA. Implementing regulations for NEPA (40 CFR 1508.27) provide criteria for determining the significance of effects. Significant, as used in NEPA requires consideration of both context and intensity.

The Forest Service has two types of decisions; programmatic (such as the Forest Plan) and project level (which implements the Forest Plan). The Spring Gulch Timber Sale Revised EA is a project-level analysis – its scope is confined to addressing significant issues and environmental effects of the project. Two alternatives were considered in detail; the no action alternative and the proposed action. The no action alternative represents the current, or baseline expected future condition given the past, present, and reasonably foreseeable activities (EA - Chapter 3). The proposed action (alternative 2) represents the expected future condition based on effects of timber harvest and associated activities under the Forest Service's Proposed Action as well as past, present and reasonably foreseeable activities.

After considering the environmental effects analyzed and described in the Spring Gulch Timber Sale Revised Environmental Assessment (EA), and the entirety of the Project Planning Record, I have determined that the actions associated with Alternative 2, the Proposed Action and selected alternative, will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27) as described below. As a result, an environmental impact statement will not be prepared. I base my finding on the following:

Context

Context refers to the affected environment in which the proposed action would occur. 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 in the world as a whole. Both short- and long-term effects are relevant.

The Spring Gulch project area is set in a forested environment in the Spring Gulch watershed of the Cabinet Ranger District, on National Forest System (NFS) lands. All aspects of the selected action were crafted specifically to avoid any significant impacts to the environment. Mechanical timber harvest (commercial) would occur on 256 acres, and precommercial thinning on an additional 66 acres. Prescribed natural fuels burning activities will be conducted during periods when burn objectives can be achieved (primarily spring and fall), and would occur on 231 acres. Local and Montana residents and some nonresidents who choose to hunt or otherwise recreate within the boundary of the project area could be most affected by the harvest activities and associated road

work. It is expected that the project will be implemented over a ten to fifteen-year period with mechanical operations typically occurring during the months of July to November of each year. The context of this proposal is localized, with direct implications only for an area of approximately 796 acres, within a limited time frame. The analysis of potential environmental impacts related to project activities demonstrates that no aspect of the proposal would result in any significant impacts. As a result, it is logical to conclude that there would be no impacts beyond the confines of the project area, and that the project area represents the maximum extent of any effects.

Intensity

Intensity refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

1. ***Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.***

All beneficial and adverse impacts of this decision are addressed in the Environmental Consequences section of the Revised EA (Chapter 3). No significant environmental impacts were identified. While there will be beneficial effects, this action does not rely on those effects to balance adverse environmental impacts. No adverse effects could be considered significant even if considered separately from any beneficial effects. The Revised EA documents comprehensive effects analyses, and the findings from these resource-specific analyses form the basis for my decision. All potential direct, indirect and cumulative effects are evaluated in the Revised EA, and Biological Assessments and Evaluations, and none rise to the level of significance.

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

Based on analyses in the Revised EA and supported by the record, I have determined that there will be no adverse impacts on public health and safety. All burning of slash and natural fuels would comply with State Air Quality Standards and be coordinated through the Montana Airshed Group. All traffic related to harvest operations will be required to adhere to state and county laws. The overall benefit from reducing forest stand stocking levels, and reduced fuel loads is a reduction in the probability of extreme fire behavior in the treated stands.

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

The project area can be characterized as typical temperate forest mixed-conifer community. It does not contain historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. As such, it does not include ecologically critical areas or other unique characteristics, as defined above.

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

Management of publically owned forest land can be controversial in nature; however, it is seldom controversial from a scientific perspective. The controversy must be relative to environmental *effects*, not the nature of the action(s). The project area is not ecologically unique, and the effects of proposed

actions on the quality of the human environment are not likely to be highly controversial because there is no known scientific controversy over the impacts of this project.

The Interdisciplinary Team developed the proposed action in response to the project purpose and need; Forest Plan objectives, goals and standards; and public and agency concerns. Seven comment letters on this proposal were received, with five being in support of the project; the level of response relative to the pool of forest users is small and reflects a low level of controversy among the general public regarding this project.

I reviewed all comments received during the scoping of this project and during the comment period for the Revised EA, in addition to the analysis documented in the Revised EA. I do not find any highly controversial effects to the human environment. It is my determination that there is no known scientific controversy over the environmental effects.

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

Based on past similar activities on the Kootenai National Forest, the effects on the human environment are well understood. The Environmental Consequences section of the Revised EA discloses the direct, indirect and cumulative effects of Alternative 2, the selected alternative. Those effects do not indicate uncertain, unique or unknown risks, based on documentation in the Revised EA and Biological Assessments/Evaluations. Monitoring of past activities and projects has confirmed the predicted effects analysis.

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 Spring Gulch Timber Sale Project represents a site-specific project that does not set precedence for future actions or present a decision in principle about future considerations.

Any proposed future project must be, and will be evaluated on its own merits and effects. The proposed activities are in accordance with general and specific management area guidelines and direction in the Forest Plan, and the best available science we have to manage stand vigor through stocking control, and fuels and fire behavior.

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

Analyses conducted by resource specialists and disclosure of those analyses in the Revised EA support the finding that the selected alternative will not cause significant cumulative effects on biological, physical, or socio-economic resources, even when considered in relation to other actions (EA – Chapter 3, cumulative effects disclosures).

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 historical resources.***

The project area has been surveyed for heritage resources. Based on design features and avoidance (EA – Chapter 2 - Design Criteria) and consultation concurrence from the State Historic Preservation

Office (EA - Chapter 3 - Cultural Resources), no adverse effects to National Register eligible or listed heritage resources will occur.

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.***

A wildlife and plant species Biological Assessment for Threatened and Endangered Species, and a Biological Evaluation for Sensitive Species were prepared (EA - Chapter 3 - Wildlife and Biological Assessment) and determined the following for ESA listed species; May Effect but is not Likely to Adversely Affect the grizzly bear and Canada lynx, and No Effect for the gray wolf. The project area is located inside the Recovery Zone for grizzly bears in the Cabinet/Yaak Ecosystem. Should a grizzly be present in the project area there could be short term displacement of individual bears due to project activities, and such displacement is not considered a significant impact to the species.

A Fisheries Biological Assessment and Biological Evaluation for the Spring Gulch Project were completed and determined No Effect to the ESA listed bull trout (EA – Chapter 3 - Fisheries).

The determination is No Effect to any plant species listed as Threatened or Endangered, specifically water howellia, and Spalding's catchfly (EA – Chapter 3 - Plants).

I have also examined potential impacts to Sensitive species and the determinations are; No Impact for bald eagle, common loon, harlequin duck, northern bog lemming, northern leopard toad, Westslope cutthroat, and peregrine falcon; May Impact Individuals or their Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or the Species for black-backed woodpecker, Coeur d'Alene salamander, fisher, flammulated owl, Townsend's big-eared bat, western toad, and wolverine. Determinations for plant species are; No Impact to any sensitive plant species.

Based on the above evaluation, it is my determination that the analysis documented in the Revised EA and supported by the record, clearly shows there would be no adverse effects to any listed Threatened or Endangered species, nor would there be adverse impacts to any species of concern included on the Region 1 Sensitive Species list.

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

The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the Revised EA. The Revised EA has been completed pursuant to the National Environmental Policy Act, Forest Service Handbook 1909.15, and the 36 CFR 215. This action complies with the National Fire Plan, and the Kootenai National Forest Land and Resource Management Plan (Forest Plan). Alternative 2, the selected alternative, is designed to meet Forest Plan goals, follow Forest-wide direction, standards and guidelines, and Management Area direction. Alternative 2 was also reviewed and found to be consistent with the Forest Plan related to Old Growth, and Detrimental Soil Disturbance (EA – Forest Plan Consistency discussion).

NOTE - A FONSI "*shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it. If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference*" (40 CFR 1508.13). The Spring Gulch Timber Sale Project Revised Environmental Assessment, in its entirety, is hereby incorporated by reference.

USDA United States Department of Agriculture | Forest Service | Kootenai National Forest | 406 293-6211 | Forest Supervisor's Office 31374 US Highway 2 West Libby, MT 59923-3022

File Code: 1920/1950 **Date:** August 1, 2011

Subject: Spring Gulch Timber Sale Project-Specific Amendment for Cavity Habitat Reduction in MA 10

INTRODUCTION

The Spring Gulch Timber Sale Decision Notice (DN) would suspend the following Forest Plan standard in order to implement the Proposed Action:

Management Area 10 Wildlife and Fish Standard #3

"Existing cavity habitat will be retained."

(Forest Plan, Volume I, p. III-39)

BACKGROUND

The Spring Gulch Timber Sale project area is approximately 796 acres in size, and is located in the Spring Gulch creek drainage ten air miles southeast of Trout Creek, MT, on the Cabinet Ranger District. Alternative 2, the preferred alternative, includes commercial timber harvest activities on 248 acres, and a total of approximately 549 acres of acres of prescribed fire use. Of these activities, 132 acres would be on lands designated in the Forest Plan as Management Area (MA) 10, Big Game Winter Range. Mechanical treatments associated with harvest of commercial timber, including timber felling and yarding, would take place on 21 acres in lands designated as MA 10. Natural fuels burning, via prescribed fire use would occur on 111 acres of MA 10. These activities in MA 10 would necessitate the suspension of Wildlife and Fish Standard #3 to allow incidental loss of snag habitat identified as hazard or danger trees during harvest operations.

PURPOSE AND NEED FOR THE AMENDMENT

The Purpose and Need for this project is to: (1) limit forest and tree damage occurring from insect and disease activity to specific stands; (2) reduce hazardous fuels within the wildland/urban interface; and (3) to contribute forest products to the local and regional economy (Environmental Assessment (EA) Chapter 1, Purpose and Need, p. 6).

The proposed timber harvest would benefit wildlife by removing subdominant trees and increasing the area available for forage species to grow. By opening the canopy within portions of MA 10, more light would reach the ground and further enhance the growth of forage species. Additionally, thinning of the understory would reduce the amount of ladder fuels present and lower the possibility of crown level wildfires, which in turn would enhance the fire resilience and longevity of these forested communities.

EXISTING CONDITION

Proposed activities in MA 10, big game winter range, are found primarily in warm, moist habitats, all within the wildland/urban interface area. The EA describes the cavity habitat within the proposed treatment areas found within MA 10 (Chapter 3, Wildlife and more specifically in the discussion of snag habitat, Chapter 3, pp. 26-29), and in the analysis of effects to pileated woodpecker (Chapter 3, pp. 35-36). The pileated woodpecker is designated as a Management Indicator Species for snags and old growth habitat (1987 Plan, Appendix 12).

In general, effective fire suppression and reduced mixed-severity underburns have altered the species composition and stand structure in these areas. The stand structure can be characterized as having two to three canopy layers composed of predominately Douglas-fir and lodgepole pine, with more shade tolerant species in the subordinate canopy layers. The lower canopy is composed of a dense understory of smaller

KOOTENAI FOREST PLAN

LAND AND RESOURCE MANAGEMENT PLAN

Spring Gulch Timber Sale Project-Specific Amendment

Within the Spring Gulch Timber Sale project area, the Kootenai National Forest Plan, page III-39, in Management Area (MA) 10 is modified for the Wildlife and Fish standard #3, to suspend the requirement that existing cavity habitat be retained. This modification applies only to the project area that is located on the Cabinet Ranger District and shown on the project location map. This amendment would be in place only during the life of the project, which is expected to be 3-5 years.

The current standard for Management Area 10, Wildlife and Fish Standard #3 (Forest Plan, Vol. 1, p. III-39) is:

"Existing cavity habitat will be retained."

The Forest Plan states "If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for that project."

This project specific amendment allows achievement of the overall Forest Plan goal for this Management Area, which is to "maintain or enhance the habitat effectiveness for winter use by big-game species including elk, moose, sheep, goats, whitetail deer, and mule deer. Maintain or enhance the viewing resource in areas visible from major travel corridors." (Forest Plan, Vol. 1, p. III-38). The amendment allows for a potential short term reduction in cavity habitat over a small number of acres in order to meet fuels reduction objectives while providing a safe working environment for workers during project implementation.

Project-specific amendments must comply with the National Environmental Policy Act procedures. Compliance with these procedures and rationale for this project-specific amendment is contained in the Spring Gulch Timber Sale Project Environmental Assessment and associated project record. Forest Supervisor's approval is included in the Decision Notice.

Approval Date: August 2, 2011

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Spring Gulch Timber Sale Project
MA-10 Forest Plan Amendment

lodgepole pine, Douglas-fir, grand fir, and western red cedar. These high density understories reduce the amount of forage available as well as reducing the palatibility of the forage that remains. Lodgepole pine is currently experiencing mortality from an on-going outbreak of mountain pine bark beetles. These stand conditions provide vertical fuel continuity to the crowns of larger trees, and increase the potential for wind driven, crown-level fires.

The Proposed Action timber harvest and prescribed fire use would affect approximately 132 acres total in MA 10, possibly resulting in some reduction of cavity habitat on those acres. No effects to snag levels in riparian zones are expected due to the required establishment of riparian habitat conservation areas (RHCAs).

The EA analyzed cavity habitat effectiveness for the Spring Gulch Planning Sub-Unit (PSU) (Chapter 3, pp. 26-29). Existing potential population level (PPL) for cavity excavators for National Forest System (NFS) lands in the PSU was calculated to be 85% (Chapter 3, p. 26). Implementation of Alternative 2 would reduce this to 81%, which meets Forest Plan standards. The minimum PPL specified in the Forest Plan is 40%. There will be no adverse effects to old growth habitat within the Spring Gulch PSU (EA, Chapter 3, pp. 22-26). Consequently, potential nesting territories of individual birds would not be rendered ineffective for nesting as a result of project activities.

PROPOSED ACTIVITY

The Preferred Alternative (Alternative 2) includes an amendment to the Forest Plan on a project-specific basis to allow incidental reduction of cavity habitat in MA 10 (EA, Chapter 2, p. 8). The silvicultural prescriptions for harvest units in MA 10 emphasize leaving the largest, healthiest trees in the stand, with more long-lived, fire resistant species being preferred for retention.

In order to implement this action, which responds to the purpose and need statements listed in the EA and above, some loss of snags within cutting units is possible due to Occupational Safety and Health Administration (OSHA) regulations requiring that danger trees in logging units be felled to ensure the safety of forest workers. Therefore, cavity habitat associated with snags is likely to be reduced in some portions of the land area designated as MA 10.

ALTERNATIVES CONSIDERED

Alternative 1 does not propose timber harvest, prescribed fire use, road reconstruction or any other actions associated with the Alternative 1, the proposed action. The no action alternative provides a baseline for comparison of environmental consequences of the other alternatives to the existing condition (36 CFR 1502.14). Under this alternative, management actions in the project area would be limited to the ongoing and reasonably foreseeable actions listed in Chapter 3, representing a "status quo" strategy. This includes wildfire suppression, road maintenance, routine BMP work, noxious weed treatment, trail maintenance, special uses, public use on NFS lands, and actions on privately owned lands. No Forest Plan amendment would be required.

Treatments in Alternative 2 have been designed to increase the growth and vigor of the residual conifers, which will result in increased potential for large snag production in the future. Canopy reductions resulting from the harvest treatments will provide increased light to the forest floor, which will stimulate the growth of understory vegetation, providing forage for big game species. Underburning prescribed with these treatments will reduce natural fuels, interrupt the succession of Douglas-fir, and help ponderosa pine and western larch maintain dominance in treated stands. In addition, some snags would be created due to incidental prescribed fire mortality.

PUBLIC NOTIFICATION

The public was notified during the initial scoping period that a project-specific amendment to the Forest Plan, to allow fuel reduction treatments and the associated potential loss of cavity habitat, would be needed to implement the project (see Project record, Scoping Letter) and included a 30-day comment period notification. A request for comments was published in the *Daily Inter Lake* on November 25, 2010. Notice of

the needed Forest Plan amendment was included in the legal ad. The EA discusses the need for the amendment (Chapter 1, p. 7, and Chapter 2, p. 8). One comment letter was received from the WildWest Institute (Missoula, MT) regarding the inclusion of this amendment associated with Alternative 2 and potential loss of cavity habitat in MA 10. The commenter is opposed to any amendment of the Forest Plan.

EFFECTS ANALYSIS

Direct and Indirect:

Alternative 2 would mechanically harvest 21acres in MA 10 to modify stand density, and treat 11 acres using prescribed fire to reduce the reduce natural fuels and enhance ungulate winter range. Treatments would reduce overall stand stocking, reduce crown bulk density and reduce ladder fuels. These treatments would also result in some reduction of cavity habitat on those acres, related to safety requirements for felling and yarding of trees, or loss of snags due to prescribed fire use. Prescribed fire use would result in the loss of some snags, but this would be countered by anticipated mortality and creation of new snags during the burn operations. No effects to snag levels in riparian zones are expected due to the required establishment of RHCAs. Thinning harvests prescribed are expected to provide for the continuity of large diameter overstory ponderosa pine and Douglas-fir, which will provide long-term benefits to cavity-dependent species by retaining the large diameter trees in the overstory. These large overstory trees will eventually provide large diameter snags.

PPL for cavity excavators on NFS lands in the Spring Gulch Timber Sale project area would drop from an existing condition of 85% to 81% because of the project. This level exceeds the Forest Plan minimum PPL of 40%, considered the minimum level necessary to maintain viable populations of cavity dependant species (EA, Chapter 3, p. 27). In addition, Alternative 2 is expected to have minimal direct effects to snag habitat due to offsetting activities, such as prescribed underburning has the potential to cause existing snags to fall over, it also has the potential to create new snags by killing some live trees.

Cumulative:

A comprehensive catalogue of past actions is included in the EA (Chapter 3, pp. 1-6). Also, chapter 3 of the EA displays the past, present and reasonably foreseeable future projects in the Spring Gulch Timber Sale Analysis area, relative to all resource areas analyzed. The cumulative effects of Alternative 2, the preferred alternative, are documented in detail in each resource section of chapter 3.

This project-specific Forest Plan amendment is for the Spring Gulch Timber Sale project area only and does not apply to other areas. The amendment will apply to less than 1 percent of the Kootenai National Forest (298 acres mechanical harvest, and 299 acres of prescribed fire use). Since the establishment of the Kootenai Forest Plan in 1987, fourteen other project-specific amendments to the Forest Plan have been made for MA 10 Wildlife and Fish Standard #3. These include: Sheep Range Timber Sale, Wood Rat Timber Sale, and Beaver Creek Ecosystem Mgmt Project of 1998; the Pine Timber Sale of 1999; the Alexander Timber Sale, Spar and Lake Forest Health Project and Troy Beetle projects of 2001; the White Pine Creek project of 2002; the Dead Beaver Project of 2004; the Cow Creek Project of 2005; the Smoked Fish Project of 2006; the Kootenai River North Fuels Reduction Project of 2007; Marten Creek Project of 2008; and Little Beaver Hazardous Fuels Reduction Project of 2009. The cumulative effects of amendments to the Kootenai Forest Plan were analyzed in the *Cumulative Effects of Past Projects on Wildlife* (Johnson 2006) and the findings were considered in evaluating the potential effects of this project-specific amendment.

Forest-wide, monitoring results show that overall, a high percentage of compartments on the Forest meet Forest Plan standards for cavity habitat (KNF Forest Plan Monitoring and Evaluation Report, Fiscal Year 2007). Un-harvested area contributes greatly to meeting this standard. The KNF Forest Plan Monitoring and Evaluation Report, Fiscal Year 2007 (pages 37-38), goes on to say:

> "Monitoring results to date provide evidence that there are mixed results in providing the minimum desired density of snags in harvest units (Table C-6-1). This is due to several

factors including the felling of snags for safety reasons during harvest, lack of available snags to begin with in certain vegetation types, and loss of snags to firewood cutters. Improvement in retaining snags is occurring. With the new OSHA regulations, the emphasis is on leaving snags in clumps or stringers that are not harvested and retaining green replacement trees versus existing snags.

Monitoring that has been completed on a compartment or drainage basis indicates that we are meeting the intent of the Plan by providing cavity habitat at a level sufficient to maintain viable populations of dependent wildlife (40 percent or more of population potential). However, the availability of cavity habitat is less than desired in some drainages (Table C-6-2).

Another consideration is the fact that over 50 percent of the Forest is not within the suitable timber base and will not be logged, plus the fact that much of the suitable timber base has also not yet been logged. This provides assurance that there has not been a Forest-wide reduction in habitat capability approaching 40 percent of potential.

In summary, the available monitoring data indicates the Forest is providing sufficient cavity habitat at a drainage or compartment level. Based on this information, the creation of numerous snags by wildfires, and the existence of ample cavity habitat in the majority of the Forest that is outside the suitable timber base, this monitoring item is within acceptable limits of the Plan."

CHANGES TO THE FOREST PLAN THAT ARE NOT SIGNIFICANT

Our determination of whether this proposed amendment is significant was done using the process in the Forest Service Land Management Planning Handbook, Section 1926.51. The handbook states that changes to the land management plan that are not significant can result from four specific situations. This project-specific amendment is compared to those situations below:

1. **Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.**

   This MA10 amendment does not alter the multiple-use goals and objectives for long-term land and resource management at all – let alone significantly alter them. The goal of MA 10 is to maintain or enhance the habitat effectiveness for winter use by big-game species including elk, moose, sheep, goats, whitetail deer, and mule deer. An additional goal of the MA is to maintain or enhance the viewing resource in areas visible from major travel corridors (Forest Plan Vol. 1, page III-38).

   The goals of this management area would not be changed by allowing timber harvest and prescribed fire use to occur to meet fuel reduction objectives, or by creating the potential for short-term loss of cavity habitat in a portion of the project area. Thinning harvests and burning would improve the condition of forage in the area, thus partially contributing to the goals of MA 10. Retention of overstory trees will provide future snags through natural pathways. Prescribed burning associated with project activity will likely result in the loss of some snag habitat, while creating additional snags.

   This amendment is for the Spring Gulch Timber Sale Project Area only. Proposed activities related to this project would affect approximately 597 acres of MA 10 lands in the project area, or less than 1% of the total MA 10 allocation on the Kootenai National Forest. Potential reduction in cavity habitat would be minor and short-term at the site-specific level. At any larger scales, the effects become immeasurable. Forest-wide, monitoring indicates that 100% of monitored compartments meet Forest Plan standards for cavity habitat (KNF Forest Plan Monitoring and Evaluation Report, Fiscal Year 2007, pages 36-38).

2. **Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and**

objectives for long-term land and resource management.

This MA 10 amendment does not adjust management area boundaries or management prescriptions.

3. **Minor changes in standards and guidelines.**

   This MA 10 amendment is a minor and temporary change to the standard. It provides for more site-specific application of cavity habitat standards to meet the purpose and need for the project while meeting the safety needs for forest workers.

   The amendment would be in place only during the life of this project, which is expected to be approximately three-five years. Therefore, this is not a long-term change in the Forest Plan.

4. **Opportunities for additional projects or activities that will contribute to achievement of the management prescription.**

   This MA 10 amendment permits activities to take place, including fuels reduction, thinning of trees, and prescribed burning that would also improve the condition of forage in the area, thus partially contributing to the goals of MA 10.

CONCLUSION – EVALUATION OF SIGNIFICANCE

Based on consideration of the four factors identified in the Forest Service Land Management Planning Handbook, 1926.51, and considering the Forest Plan in its entirety, I have determined that the adoption of this project-specific amendment to the Kootenai National Forest Plan is not significant. This amendment is fully consistent with, but further refines the means to achieve current Forest Plan goals and objectives and comply with OSHA safety standards, while still meeting the intent to retain cavity habitat contained in Management Area 10 Wildlife and Fish Standard #3 and Timber Standard #3.

Recommended by:

KATHY RODRIGUEZ — 08-02-11 — Date

Forest Planner

Approved by:

PAUL BRADFORD — 8/2/2011 — Date

Forest Supervisor

Appendix D

Spring Gulch Timber Sale Project Revised Environmental Assessment

Response to Comments

Comments received in response to release of the Revised Environmental Assessment (EA) for the Spring Gulch Timber Sale project (January 17, 2013) are presented here, along with responses. Complete comments are included in the project file and summarized below.
As the deciding officer I have ensured each comment has been reviewed, analyzed, evaluated, and responded to as required (FSH 1909.15, Chapter 20).

COMMENT – (Mineral County Board of Commissioners)

We are always pleased to encourage active management of our federal forests (the preponderance of our land base) that helps provide what's left of our forest product industry with raw materials and provide economic opportunities so important and necessary to our communities.

RESPONSE – Supportive, no response warranted.

COMMENT – (Charles and Judy Woolley)

We would like to go on record as supporting Alternative 2 in regards to the Spring Gulch Timber Sale environmental assessment.

RESPONSE – Supportive, no response warranted.

COMMENT - (Kathleen S. Hassan)

I fully support the Forest Service in their effort to manage the resources as designated by the Healthy Forest Management Act in the Spring Gulch project area.

Also I strongly urge keeping the Deep Creek road open as it is a beautiful recreation access road for hundreds to enjoy hiking, camping, hunting, fishing, and four wheeling.

RESPONSE – Regarding the Deep Creek Road, this road was initially considered (original EA) as a haul route for the proposed timber harvest. Further analysis determined that an alternate route would be more efficient to facilitate the proposed harvest. Any work or changes in the status of this road is not connected to the Spring Gulch project.

COMMENT – (Bruce Hunn/Nancy Mehaffie)

We fully support your proposed action alternative for the Spring Gulch Timber Sale.
The action alternative will improve forest health by reducing density, improve forest habitat for many species by increasing forage and improving habitat and greatly reduce fuels for fire prevention. We encourage you to feather any straight line boundaries thereby imitating mosaic fire burn patterns.

This timber sale will meet the intent of the Healthy Forests Restoration Act (HFRA) and help the Department of Agriculture, Forest Service, protect at-risk communities, support the Sanders County Community Wildfire Protection Plan, reduce wildfire risk, protect the watershed and water supply, reduce future insect and disease infestations and improve the economy in our county.

We also would like to support the Road along Deep Creek being left open for the recreational access it provides to everyone including those who are handicapped and are restricted to motorized vehicles.

I have great concern that the document titled Biocentric Ecological Sustainability; a Citizen's Guide by Reed Noss was able to stop the original timber sale. Good researched science and results should be the driving force behind decisions.

RESPONSE – The "*road along Deep Creek*" is apparently reference to FSR #1023, which is located on the Lolo National Forest. This road was initially considered (original EA) as a haul route for the proposed timber harvest. Further analysis determined that an alternate route would be more efficient to facilitate the proposed harvest. Any work or changes in the status of this road is not connected to the Spring Gulch project.

COMMENT - (Robert Pierson)

I believe that it very important to the health of the forest in the Kootenai/Cabinet area to proceed with alternative 2, timber management, road improvement and fuels management. There are far too many unhealthy, dead and dying areas that need desperately to be cleaned up and roads repaired for fire access.

RESPONSE – Supportive, no response warranted.

COMMENT – (Jeff Juel of the Lands Council, and Mike Garrity of the Alliance for the Wild Rockies)

We appreciate one change from the first version of the EA which is the proposal to decommission Road 1023, as we suggested during a November 2011 tour of the Project Area with the Forest Service (FS). It appears from the revised EA that the Kootenai National Forest (KNF) is deferring this decision to the Lolo National Forest, from whom we've heard nothing lately on this rather straightforward action. We cannot support Spring Gulch project activities going forward prior to a decision that decommissions the road including a time frame, because of the ongoing adverse impacts to water quality due to Road 1023's location immediately adjacent to Deep Creek.

RESPONSE – Forest Service Road (FSR) #1023 was initially considered for a haul road on this project, should the Spring Gulch Timber Sale be approved. However, after careful evaluation an alternative haul route was determined to be more conducive to facilitating removal of wood products from the project area, as described in the Environmental Assessment (EA, Chapter 1, pp. 10-11). There is a proposal on the Lolo National Forest, which was scoped with the public, to abandon road #1023 but that decision has not been made. Future management of the road is not relevant to the Spring Gulch decision, nor is it required mitigation should the decision to proceed with the project be approved. Additionally, future management actions on FSR #1023 are not considered an action connected to the Spring Gulch project, under the National Environmental Policy Act (NEPA).

COMMENT - *Following the withdrawal of the 2011 Decision Notice (DN), I had discussions with FS staff in the project area in November of 2011 that touched on several topics. These were memorialized in a letter to the former District Ranger. One of those topics was the approximately 1 mile portion of Forest Road 2241 that is gated off past proposed unit 6. The gated off portion forms a boundary of the Cataract Creek Inventoried Roadless Area. I emphasized that the condition of that segment of the road was such that it was an ecological detriment partly due to the fact that it hadn't been maintained and was showing signs of erosion that could potentially affect water quality. A specific request was made to decommission that portion of the road.*

RESPONSE –Travel Analysis shows the 1.1 mi section of Forest Service Road #2241 as needed for future management options, and will be kept on the system for future access. Other commenters have expressed a desire to keep roads open. The scoping done by the Lolo NF for the potential closure of the 1023 road had numerous responses from the general public expressing support for not closing this road.

COMMENT - *Similarly, I discussed Forest Road 2771, and that the proposal to reopen it would increase grizzly bear displacement and security concerns not only due to activities during the timber sale, but because of subsequently increased vulnerability to unauthorized ATV or other motorized trespass.*

RESPONSE – FSR #2771would be opened for administrative use during implementation of this project. At no point would the road be open to motorized use by the public. Upon completion of project related activities, the road would be closed to public motorized use; an earthen berm or gate would be installed to discourage unauthorized use. As with all road closures, this specific closure would be monitored for illegal motorized use.

COMMENT - *During the November 2011 field trip, the District Ranger at the time stated he was open to the possibility of dropping commercial treatment of the two units inside the unroaded area immediately adjacent to the Cataract Creek IRA. This was an issue we included in our appeal of the 2011 DN.*

RESPONSE – Harvest activity in these two units is an integral part of the strategy to meet the purpose and need for treatment in Spring Gulch. The potential effects of activities on the "un-roaded" character of the area adjacent to the Cataract Creek IRA is analyzed and documented in the Revised EA pp. 3-202 through 3-205 and pp. 3-206 through 3-210.

COMMENT - *Also during the November 2011 field trip, I pointed out that the forest in some units proposed for logging is fairly mature, with many large trees, making them good candidates for future old growth designation. In fact, our previous comments and appeal raised this issue was and a strategy was offered that would set aside habitat for old-growth associated wildlife, bringing the amount to within the HRV.*

RESPONSE – Old growth habitat in the project area and adjacent compartments has been evaluated (revised EA Chapter 3, pages 58-65)) and all Forest Plan standards and guidelines are currently met and would be met should this proposed project be implemented. Also, the "fairly mature" stands identified for consideration for thinning would be thinned to increase the average diameter of the reserve stand.

COMMENT - *Despite those November 2011 discussions and the letter to the District Ranger memorializing them, except for the possible decommissioning of Forest Road 1023 nothing in the EA acknowledges or recognizes our discussions of these issues. So often I've heard FS staff or timber industry representatives complain that appellants wait until late in the NEPA process to offer suggestions or solutions, at a point in*

time when the agency finds it difficult to make changes. We discussed the above issues with you very shortly after the DN was withdrawn, 14 months before this new Revised EA was issued. The action alternative in the EA fails to include even a shred of those suggested features. Such a failure to even acknowledge public input and suggestions has the effect of discouraging early public involvement, funneling public involvement toward the appeal stage and beyond. The original Decision Notice was pulled in response to our appeal. We appealed because the DN and EA not (sic) *in conformance with laws, regulations, FS policy, and in our opinion, principles of good stewardship. The FS has not provided a formal written response to the issues raised in the appeal, so we must include them in this letter in order that they will be addressed prior to the next stage of project development.*

(NOTE: the commenter then provided statements related to the topics below, as part of the above comment. It is important to note that these four comments were part of Mr. Juel's response to scoping of the proposed action, and the comment responses are part of the project record):

Inventoried Roadless and Unroaded Areas

Grizzly Bear

Logging within Lands Classified as "Unsuitable" Violates the Forest Plan.

Old-Growth Associated Wildlife and Habitat

RESPONSE – Collaboration and public involvement are critical components of project planning in the Forest Service. Comments received from Mr. Juel during scoping were considered and responded to. Documentation of public input and the agency responses to that input are included in the project file. Mr. Juel's comments and the statements made during the field trip were discussed with the IDT. His concerns were taken into account but did not necessitate an additional alternative or change what the IDT believed was the best means to accomplish the purpose and need developed for this project.

Mr. Dick Artley – the Forest Service received the following comments from Mr. Artley as part of his lead-in to numerous attachments and literature citations. The lead-in narrative and comments are presented first, and then attachment comments follow.

COMMENT - *Before I begin my comments I ask you to please consider them in the context of what these wise and caring people have to say:*

> *"We must protect the forests for our children, grandchildren and children yet to be born. We must protect the forests for those who can't speak for themselves such as the birds, animals, fish and trees." Chief Edward Moody*
> *"If you cut down a forest, it doesn't matter how many sawmills you have if there are no more trees." Susan George*
> *"The National Forests are creatures of Democracy, not the Forest Service." John Freemuth*

As a communal owner of the Kootenai 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 that destroys the proper functioning of several important natural resources in (and downstream) the sale area for many years.

RESPONSE – Relevance unclear; no response warranted.

COMMENT - *Unlike the References Section Contained in the revised pre-decisional EA, the Opposing Views Attached to these Comments Describe the Resource Degradation 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).

> ***Comment:*** *Please remember, by definition viewpoints are opinions.*

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

> ***Comment:*** *Please include (and cite) the source documents for the opposing views contained in the attachments to these comments 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 revised pre-decisional EA. I suggest you become familiar with the legal definition of "hard look." You should also read the Administrative Procedures Act to determine how your actions reject best science. One must know a United States law to comply with the law.*

The opposing views discussions describing the natural resource damage caused by logging (also euphemistically referred to as timber harvest) and road construction (including so-called temporary roads) represent a small fraction of the science available today showing why logging should never occur on public land.

Without exception, all literature that describes logging as beneficial to natural resources in the forest (or even ecosystem benign) is either funded by natural resource extraction corporations or authored by USDA employees.

> ***Comment:*** *This member of the public challenges the Responsible Official to find science authored by independent, unbiased scientist that explains how logging benefits the natural resources in the forest. Please list the names of these documents in the final EA. If none are shown it will mean that none exist.*

*Please see **Attachments #1 and #4**. They describe the unacceptable harm inflicted to the public land by logging and road construction.*

RESPONSE – All comments received are considered. The EA includes a comprehensive analysis of potential environmental impacts related to the proposed actions. Literature citations sent by this

commenter have been reviewed and considered for relevance and each is responded to in this document.

COMMENT - *Much of the Literature Identified in the References Section of the Spring Gulch revised pre-decisional EA has not been Peer Reviewed*

Comment: *The References section of this revised pre-decisional EA identifies many documents that have not been peer reviewed by unbiased, independent scientists.*

Comment: *I have examined each document identified in the References section of this revised pre-decisional EA online to determine if they had been peer reviewed using the information shown at the 4 links below.*

The following link explains the peer review process for government documents:
http://en.wikipedia.org/wiki/U.S._Government_peer_review_policies

The following link explains how to tell if a book/article has been peer reviewed:
http://ask.metafilter.com/75419/how-do-I-know-if-a-bookarticle-is-peerreviewed

The following link explains the peer review verification procedures:
http://en.wikiversity.org/wiki/Wikiversity:Peer_review_verification

The following link provides the definition of a peer review:
http://www.ehow.com/about_4702830_peer-review-definition.html

Therefore, I have determined that at least 75% of the references listed in the References section and cited in the body of the revised pre-decisional EA have not been peer reviewed.
Comment: *Forest Service literature must be peer-reviewed to be valid. See USFS document review direction below.*

"US Forest Service R&D provides research information to the public that is reliable, accurate, and presented clearly. We require all scientific manuscripts to be reviewed by qualified personnel, including written reviews by at least two peers, competent in the subject matter and with demonstrable objectivity. FS R&D scientists are further required to incorporate review comments, and when appropriate obtain statistical review before submitting a manuscript to the publications control officer. A set of standard guidelines is made available to reviewers containing review criteria including, but not limited to factual accuracy, quality of information, clarity, consistency, references, effectiveness, and overall merit. For manuscripts containing influential information and highly influential assessments, we adhere to additional applicable requirements embodied in USDA Research Guidelines/Peer Review, based on OMB's Information Quality Bulletin for Peer Review."
Source: http://www.fs.fed.us/qoi/peerreview.shtml

In the References section of the final revised EA please list only documents that have been peer-reviewed.

RESPONSE – There is no requirement that all information used in environmental analyses be peer reviewed.

COMMENT -

The revised pre-decisional EA P&N Statements Indicate that One Reason for the Timber Sale is to Provide Timber Products to Local Communities. Ranger Gubel you follow the USFS Script Perfectly.

Of course this is a laudable goal when the economy of a local community is <u>really</u> depressed because of the lack of forest products … if and only if the logging activities will not harm any natural resources in the forest in the short term or long term.

Most line-officers who propose commercial timber sales cite the need to "capture the volume before it deteriorates" or "recover the economic value of burned timber before the commercial value of the wood is lost to deterioration" as you have done. Your wording is a little different:

> *"Contribute forest products to the local and regional economy." (revised pre-decisional EA at page 1-4)*

We both know that this is the excuse used by most Responsible Officials to justify their tragic commercial timber sales. If (sic) *course the shortage or excess of raw materials to supply the mills of the local communities is irrelevant. I have seen this excuse used where the communities in the area near the national forest land where the timber sale was located had no wood products manufacturing facilities.*

<u>Comment:</u> *In order to assure that the logs will be processed by local labor in the woods and the logs are hauled to local mills the sale must be sold under the small business authority (SBA). The revised pre-decisional EA does not indicate this will be the case. Why?*

<u>Comment:</u> *In the final EA please identify the names of the local communities that need economic help by providing more raw materials for wood products and tell the public how it was determined that the community needs economic help. Also tell the public how the motels and restaurants will be affects when the public chooses to recreate in an area that has not been logged.*

RESPONSE – Any decision whether or not to offer timber sales for bid under the SBA would be made outside the authority of the Decision Notice for the Spring Gulch Timber Sale project. The EA includes a comprehensive analysis of economic issues (Chapter 3, pages 249-252).

COMMENT

The Predicted Environmental Consequences Described in Chapter 3 of the Revised Pre-Decisional EA are Untrue and Deceptive

Congress promulgated laws mandating Responsible Officials to accurately describe and disclose the predicted environmental effects (positive & adverse) of implementing the Proposed Action.

A few USFS line-officers like you attach spiritual value to volume. You will tell the public who pays your salary and trusts you <u>anything</u> to grease the skids so your precious timber sales will slide through the NEPA and appeals process without public opposition.

> ***<u>Comment:</u>*** *Ranger Gubel you willfully and consciously minimize, lessen and play-down the predicted adverse environmental effects of implementing the Spring Gulch timber sale.*

> ***Comment:*** *Unidentified USFS employees with unknown credentials make deceptive, unsubstantiated, and untrue statements in Chapter 3 trying to diminish the magnitude of the* ***real*** *resource damage to* ***ALL*** *natural resources predicted to be harmed by this timber sale. They do not provide credible evidence that the adverse effects will be "short-term," "temporary," minor," and/or "unmeasureable."*

RESPONSE – The EA presents the results of comprehensive analyses of potential environmental impacts related to the proposed actions, following the protocol required under NEPA and all related law, regulation and policy.

COMMENT - *The Local Public will Soon become Aware that the Responsible Official Places Higher Importance on Volume Accumulation than Public Safety*

NOTE – this comment is summarized here, as it includes numerous citations and quotes from Dr. Jack Cohen's research on flame vulnerability of structures. Please see the specific attachments and comments in their entirety in the project file.

The revised pre-decisional EA at page 1-7 states:

> *"The Spring Gulch Revised EA is entirely within the WUI, as identified in the Sanders County Community Wildfire Protection Plan."*

Clearly ***THE*** *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. They are also ineffective at reducing fire intensity and rate of spread.*

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 conclusions, please see ***attachment #11,*** **(and 3)**.

Dr. Cohen states: "Bessie and Johnson (1995) show weather (fuel moisture and wind) is far more important than fuels in determining fire behavior; reducing fuels may have a limited impact on fire occurrence." (Pg.1999)

Source for quote above: *Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States, Published in Forest Ecology and Management 256, 2008*

http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf

Dr. Cohen states: "Treating fuels to reduce fire occurrence, fire size, or amount of burned area is ultimately both futile and counter-productive." (Pg.1999)

Source for quote above: *Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States, Published in Forest Ecology and Management 256, 2008*

http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf

Dr. Cohen states: "Thinning to reduce crown fire potential requires careful evaluation of the tradeoffs in treatment effects on potential surface fire behavior and crown fire behavior (Scott and Reinhardt, 2001). Thinning will often result in increased potential surface fire behavior, for several reasons. First, thinning reduces the moderating effects of the canopy on windspeed, so surface windspeed will increase (Graham et al., 2004). It also results in increased solar radiation on the forest floor, causing drier surface fuels. It may also cause an increase in flammable grassy and shrub fuels over time, due to the reduced tree competition." (Pg.2000)

***Source for quote above:** Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States, Published in Forest Ecology and Management 256, 2008*

http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf

RESPONSE – The Spring Gulch Timber Sale is not designed to specifically protect structures on private land. Rather it is designed to reduce the probability of extreme fire behavior within the treated areas only. A comprehensive analysis of fire and fuels issues is included in the EA (Chapter 3, pages 37-58).

COMMENT

Dr. Ingalsbee and Dr. Fox state: "We cite evidence that logging-induced changes in fuel composition, vegetation, and microclimate can result in increased rate of fire spread, higher fireline intensity, and more severe fire effects." (Abstract-2nd paragraph)

***Source for quote above:** Fuel Reduction for Firefighter Safety*
Published in Proceedings of the International Wildland Fire Safety Summit
Winthrop, WA, Oct. 26-29, 1998
http://www.fusee.org/docs/fuelbreaks/fuel_reduction_copy.htm

> ***Comment:** Ranger Gubel, once again an unbiased, independent scientist says "logging-induced changes in fuel composition, vegetation, and microclimate can result in increased rate of fire spread, higher fireline intensity, and more severe fire effects" and you reject his observations.*

Dr. Ingalsbee states: "Time does not permit me to go into details about the prescriptions for the HazRed project, but the community "freaked out" when they saw the results of the timber marking crew: over 8,000 trees over 20 inches DBH marked for cutting, including a couple rare 6 foot DBH sugar pines. The community felt that HazRed was essentially a timber sale functioning as a "Trojan Horse" to set the precedent for commercial logging in an improper place using fuels reduction as an illegitimate excuse."

***Source for quote above:** "Analysis Paralysis" to Agency-Community Collaboration*
in Fuels Reduction for Fire Restoration: A Success Story
From an Oral presentation to the Conference on Fire, Fuel Treatments and Ecological

Restoration: Proper Place, Appropriate Time, April 18, 2002 Fort Collins, CO
http://www.fire-ecology.org/research/FtCollins_speech.html

> ***Comment:*** *Ranger Gubel, you know how the public detests commercial logging in their national forest land, yet in your zeal to accumulate your precious volume you ignore all other facts … including the fact that you refuse to administer the national forest the way the public wants.*

Dr Agee states: "large, severe wildfires are more weather-dependent than fuel-dependent," ***Source for quote above:*** *"The Severe Weather Wildfire-Too Hot to Handle?" Northwest Science, Vol. 71, No. 1, 1997*
http://www2.for.nau.edu/courses/pzf/FireEcolMgt/Agee_97.pdf

Comment: *Ranger Gubel, your fuels reduction proposal is an assault on the public.*
Dr. Alison states: "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)
Source for quote above: *"Forest Policy Up in Smoke: Fire Suppression in the United States."*
A PERC publication, 2007
http://www.law.northwestern.edu/searlecenter/papers/Berry_forest_policy.pdf

> ***Comment:*** *Ranger Gubel, why do you ignore the scientific fact that weather controls fire behavior … even in areas where large trees and so-called ladder fuels have been removed.*

Dr. Bessie and Dr. Johnson state: "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."
Source for quote above: *"The Relative Importance of Fuels and Weather on Fire Behavior in Subalpine Forests", Ecology, Vol. 76, No. 3 (Apr., 1995), pp. 747-762.*
http://www.jstor.org/pss/1939341
Comment: *Ranger Gubel, you apparently cannot comprehend how weather affects wildfire behavior.*

Dr. Kelly states: "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.

Drought, wind, and low humidity, not fuels loads, drive large wildifires. Weather and climatic conditions are also the driving force behind expanding insect populations."
Source for quote above: *"Cheap Chips, Counterfeit Wilderness: Greenwashing Logging on Montana's Biggest National Forest.", Published by the World Prout Assembly, 2007*
http://www.worldproutassembly.org/archives/2007/12/cheap_chips_cou.html

Comment: *Ranger Gubel, how will you replicate the fire benefits to the natural resources that exist in your timber sale area?*

Dr. Partridge states: "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."
Source for quote above: *Testimony to the Agriculture, Nutrition and Forestry Committee United State Senate.*
Hearing to Review Healthy Forests Restoration Act, HR 1904, June 26, 2003
http://www.univision.co.za/offer-day-oA2A392Cr1N3B2x_2F2du3g3-music.shtml

Comment: *Ranger Gubel, you must think you know more than the many fire scientists who say fuels reduction logging is a waster of time & money.*

Dr. Schoennagel, Dr. Veblen and Dr. Rommie state: "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 stand replacing 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)

Source for quote above: *"The Interaction of Fire, Fuels, and Climate across Rocky Mountain Forests"*
Bioscience, July 2004 / Vol. 54 No. 7
http://www.montana.edu/phiguera/GEOG430/PurdyFireFieldTrip/Schoennagel_et_al_2004_Bioscience.pdf

> ***Comment:*** *Ranger Gubel, your final NEPA document must tell the public why Dr. Schoennagel, Dr. Veblen and Dr. Rommie are wrong when they all agree that "once fuels reached critical moisture levels later in the season, the spatial pattern of the large, severe stand replacing fires was controlled by weather (wind direction and velocity), not by fuels or stand age."*

Dr. Schoennagel and her research team conclude: "reducing ignitable fuels and structures within around 100 feet of private homes has been shown to most effectively protect a home from burning."

"The authors acknowledged that fuels treatments located far from the wildland-urban interface may play an important role in protecting timber resources and rare or threatened species or ecosystems from high-severity fire. But their effectiveness in direct protection of

human communities is questionable given that the potential for a home to burn is relatively independent of distant wildland fire behavior."
Source for quotes above: *"Fire Mitigation Work in U.S. West is Misplaced, According to New Study Led by CU-Boulder"*
A University of Colorado-Boulder News Release, June 8, 2009
The results of a research project funded by the National Science Foundation and the Wilburforce Foundation

http://www.colorado.edu/news/releases/2009/06/08/fire-mitigation-work-us-west-misplaced-according-new-study-led-cu-boulder

Comment: *Dr. Schoennagel is a research scientist in CU-Boulder's geography department. Her research team included CU-Boulder graduate student Teresa Chapman, the University of Montana's Cara Nelson and Gunner Carnwath and Colorado State University's David Theobald. Their research found: "federal wildfire treatments are minimally effective at mitigating the threat of wildfire to homes and people in the western United States. Ranger Gubel, you have chosen to reject real science and instead rely on literature written by USFS employees who knew their material must support the USFS timber extraction agenda.*

The evidence is clear Ranger Gubel. Of course we all know President Bush felt that managing a national forest to maintain a fully functioning, healthy forest ecosystem was nonsense because it restrained the resource extraction corporations from having their way with public land for short term profit. This is why he installed timber lobbyist Mark Rey as Undersecretary of Agriculture. Rey was directed to set USFS policy that would result in more national forest logging. Rey capitalized on the fires of 2000 and 2002. He conjured up the need to "remove hazardous fuels." The public still believes that fuels reduction logging near the WUI is an effective way to reduce the risk of fire damage.

If the final EA for the Spring Gulch timber sale project does not analyze a Dr. Cohen alternative in detail it will be necessary to inform the public in your area about Dr. Cohen's superior fire risk reduction methods ***myself.***

I'll tell the public in your area that you have chosen not to act to protect the safety and homes of the people who live in the WUI. We both know that USFS national leaders abhor bad press … and deal harshly with USFS line-officers whose actions were exposed in the newspapers and were the basis for the bad press.

RESPONSE – The Spring Gulch Timber Sale is not designed to specifically protect structures on private land. Rather it is designed to reduce the probability of extreme fire behavior within the treated areas only. A comprehensive analysis of fire and fuels issues is included in the EA (Chapter 3, pages 37-58). A "Dr. Cohen Alternative", suggested by the commenter would not address the purpose and need for the project because this project does not propose treatment on privately owned property. In addition to protecting life, property, and resources within and adjacent to the WUI the purpose and need of the project is to trend the project area landscape toward a more fire resilient condition (Revised EA p. 3-49). Following treatment on NFS lands within the WUI, future wildfires in the project area following a severe crown fire would be less intense, less resistance to control, and would provide more of a safety margin for firefighters and residents (Revised EA p. 3-48, 3-49).

My Pending Media Contact
If the final EA is released to the public with no Dr. Cohen fire risk reduction methods alternative analyzed in detail, I will write an letter to the editor briefly describing Dr. Cohen's fire damage reduction methods that the Responsible Official refuses to analyze.

My letter will contain the link to the WEB site which explains Dr. Cohen's methods. Dr. Cohen's WEB site shows photos of post-fire conditions. The most striking photo shows several homes that were unburned where the fine fuels were removed per Dr. Cohen's recommendations and the rest of the homes burned to the ground. Prior to the fire the USFS had removed hazardous fuels on national forest land adjacent to the WUI where the homes were located.

My letter will suggest that the public contact you Ranger Gubel and ask why you believe volume accumulation and creating private industrial tree farm conditions is a higher priority than human lives and assets.

My letter to the editor will be submitted to the following newspaper, Libby Western News. We both know the USFS will do anything to avoid bad press. 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 not be working for the USFS.

RESPONSE – A "Doctor Cohen alternative" suggested by the commenter would not address the purpose and need for the proposed project. The project is not designed to prevent fire damage to structures on private land, but rather to reduce the probability of extreme fire behavior within the treated areas. See also response to previous comment, above.

In your spare time read the truth contained at the link below. The evidence is clear. Mark Rey capitalized on the fires of 2000 and 2002 to guarantee more timber sales for the corporations he lobbied for prior to Bush appointing him to Undersecretary of Agriculture.

"Why the National Fire Plan is a Trojan Horse for Logging--Burning Questions", *By George Wuerthner Ph.D., Published by CounterPunch, June 12-14, 2009*
http://www.counterpunch.org/2009/06/12/burning-questions/

RESPONSE – This citation is an opinion piece written by an author opposed to any timber harvest on National Forest System land. It is irrelevant to the decision to be made.

Ranger Gubel, you Choose 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

Comment: *The quote below from the USFS survey discussed above proves that the Proposed Action in the Spring Gulch revised 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)

RESPONSE – The Spring Gulch Timber Sale project is a legitimate proposal in implement the Kootenai National Forest Land and Resource Management Plan (Forest Plan 1987). It is my determination that the proposed actions are in full compliance with that plan. Most comments received were supportive of the proposed actions, and indeed, sought more active management of timber lands on a more broad area.

COMMENT

The courts require agencies to "consider important aspects of the problem." The Kootenai National Forest has Conveniently Overlooked Scientific Literature that Described the Adverse Ecosystem Effects of the Proposed ***Action.*** *Under the Administrative Procedures Act (APA) a court may set aside an agency action if the court determines that the action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); see also Marsh, 490 U.S. at 375-77 (arbitrary and capricious standard applies to agency findings which involve agency expertise).*

Please consider this project in light of the following excerpt from a 2007 9th Circuit opinion:
"Consequently, we may reverse the decision as arbitrary or capricious only if the agency relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, offered an explanation that ran counter to the evidence before the agency, or offered one that is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."
Source: ***SIERRA CLUB v. BOSWORTH****. An Appeal to 9th Circuit from the United States District Court for the Eastern District of California, Filed December 5, 2007*
Link to the decision: http://caselaw.findlaw.com/us-9th-circuit/1175742.html

Comment: *The public is very concerned about the adverse ecological effects of logging and road construction in their national forests. They expect to see literature explaining these adverse effects and they expect the Responsible Official to honestly weigh the trade-off of this short and long term natural resource degradation against the perceived positive outcome of logging and roading the landscape. Most members of the public will clearly explain why logging their forests for any reason is not worth the ecosystem damage.*

RESPONSE – The EA documents the required hard look demanded by the NEPA. Each resource analyzed includes a comprehensive list of citations related to those analyses. The Spring Gulch EA is not arbitrary or capricious and is in compliance with all law, regulation and policy. With few exceptions, all comments received are supportive of the proposed actions.

COMMENT

Herbicides Containing Glyphosate must Never be used on Public Land for Any Reason
At page 2-8 the revised pre-decisional EA states that a herbicide containing glyphosate will be applied to national forest land:

> *"Timber Sale Contract Provision C6.27#, Noxious Weed Treatment would be included in the timber sale contract. This clause requires the purchaser to pre-treat haul routes with herbicides to remove seed-bearing noxious weeds."*

Glyphosate kills aquatic life even if the concentrations of the chemical in water are very low. The fish deaths will occur in the streams in the project area and a few miles downstream. Herbicide mist should never be allowed to contact water … even so-called aquatic-safe herbicides.
As you already know, corporations will do anything for profit, including misrepresenting the safety of a toxic chemical they manufacture.
Indeed, the Institute of Science in Society based in London England has called for a ban on all glyphosate-containing herbicides. The Institute's mission statement is: "To promote science responsible to civil society and the public good, independent of commercial and other special interests, or of government control." Please see: http://www.i-sis.org.uk/about.php

The Society reports that endocrine disrupting action starts at concentrations as low as 0.5 parts per million (ppm). This is 800 times lower than the level of 400 ppm authorized by the US Environment Protection Agency in food or feed.
Source: http://www.i-sis.org.uk/Ban_Glyphosate_Herbicides_Now.php

Glyphosate also causes cancer, birth defects and reproduction problems in mammals that eat contaminated foliage and humans that might brush against contaminated foliage or eat contaminated berries. Glyphosate is persistent and remains active for several days after being applied.
A summary of the physical maladies that sometimes result from glyphosate contact is presented in ***Attachment #9a*** *and are listed* (list omitted here and provided in detail in the project file).

Attachment #9a *contains statements by over many respected scientists worldwide. Each of them is unbiased and will not benefit financially is the herbicide is applied. This listing of scientist doesn't come close to being the total that describe the potentially lethal effects of glyphosate contact.*

The following articles explain what Monsanto is doing to Americans who won't eat GMO foods and farmers who won't plant GMO seeds

Monsanto vs. The People, *SOURCE: Reader Supported News January 2013*

Link to the article: http://readersupportednews.org/opinion2/448-farm-and-food-policy/15565-monsanto-vs-the-people

Tell Obama and Vilsack that Monsanto's Roundup Ready Alfalfa is Not OK
SOURCE: Mother Earth News January February 2011
Link to the article: http://www.motherearthnews.com/natural-home-living/tell-obama-and-vilsack-that-monsantos-roundup-ready-alfalfa-is-not-ok.aspx

Agriculture Secretary Tom Vilsack's statement above about Roundup® safety is suspect:

"Vilsack was the origin of the seed pre-emption bill in 2005, which many people here in Iowa fought because it took away local government's possibility of ever having a regulation on seeds- where GE would be grown, having GE-free buffers, banning pharma corn locally, etc. Representative Sandy Greiner, the Republican sponsor of the bill, bragged on the House Floor that Vilsack put her up to it right after his state of the state address"

Source: Organic Consumers Organization *http://www.organicconsumers.org/articles/article_15573.cfm*

"In one chilling example from 2002, a corn crop engineered by ProdiGene to produce a vaccine for pigs contaminated 500,000 bushels of soybeans that were grown in the Nebraska field the next season. Before this incident, a similar thing had happened in Iowa where the USDA ordered ProdiGene to pay for the burning of 155 acres of conventional corn that may have been contaminated by the firm's biotech plants.
Source: Organic Consumers Organization *http://www.organicconsumers.org/usda_watch.cfm*

"Who needs the federal agency responsible for ensuring food safety for Americans? In our brave new world we rely on the "invisible hand" of the market place to regulate itself! So it's only natural that Vilsack would approve a program allowing companies like Monsanto to review itself. I'm sure Monsanto will do the environmental assessments and find that "Oh My Gosh!", GMO's are perfectly safe!
Wolf. Meet henhouse. Hens? You're toast. God bless 'Murca."
Source: Daily Kos *http://www.dailykos.com/story/2011/04/25/969976/-Tom-Monsanto-Vilsack-Must-Go*

"U.S. Agriculture Secretary Tom Vilsack, a known shill and promoter of Monsanto and biotechnology, has said that the government needs to transition and change the way the populace eats.
Source: The Intel Hub *http://theintelhub.com/2011/09/21/monsanto-shill-and-usda-secretary-tom-vilsack-says-government-will-change-the-way-citizens-eat/*

Genetically engineered alfalfa can now be planted without any federal requirements to prevent contamination of organic and non-GE crops, and GE alfalfa does not have to be labeled, leaving consumers completely in the dark and unprotected.

Judge calls for compromise Wallowa herbicide plan
SOURCE: Capital Press, November 2012
Link to the article: http://www.capitalpress.com/print/mp-wallowa-herbicide-111612

"A federal judge said he plans to impose limits on an herbicide spraying project aimed at fighting invasive weeds in an Oregon national forest.

DANISH WATER CONTAMINATED BY ROUNDUP®, BAN IMPOSED
SOURCE: Third World Network, September 2003
Link to the article: http://www.twnside.org.sg/title/service76.htm

"Denmark has imposed a ban on the spraying of glyphosates as of 15 September 2003 following the release of data which found that glyphosate, the active ingredient in Monsanto's Roundup® herbicide (RR) has been contaminating the drinking water resources of the country.

Glyphosate polluting Danish water
SOURCE: Pan International
Link to the article: http://www.pan-uk.org/pestnews/Issue/pn61/pn61p25c.htm

Pesticides – 2,4-D and Roundup® (Glyphosate), Two of the (Supposedly) Safer Pesticides
SOURCE: June Russell's Health Facts
Link to the article: http://www.jrussellshealth.org/pests24d.html/

A recent study by eminent oncologists Dr. Leonard Hardell and Dr. Mikael Eriksson of Sweden, has revealed clear links between one of the world's biggest selling herbicide, glyphosate (commonly known as Roundup®, marketed by Monsanto), to non-Hodgkins lymphoma, a form of cancer - NHL. There are even requests for permits for higher residues on genetically engineered foods because they are highly resistant to herbicides, instead of reducing herbicide use, glyphosate resistant crops may result in increased residues. They are already on sale. Farmers knowing that their crop will tolerate or resist being killed off by the herbicides will tend to use them more liberally. There have been no risk/benefit analysis carried out, so the regulatory authorities have failed to implement the precautionary principle with respect to GMOs.
("Herbicide Tolerance," New Study Links Monsanto's Roundup to cancer," www.biotech-info.net/glyphosate_cancer.html - June 2001)
The Women's Cancer Resource Center (WCRC) and CHOSE (Coalition for a Healthy Oakland School Environment), showed that chemicals such as Round-Up (glyphosate) can result in reproductive damage as well as damage to the kidney and liver, and some studies show a link between the chemical and cancer.
(Chemical Injury Network, June 2001)
"Glyphosate (Roundup®) is one of the most toxic herbicides, and is the third most commonly reported cause of pesticide related illness among agricultural workers. Products containing glyphosate also contain other compounds, which can be toxic. Glyphosate is technically extremely difficult to measure in environmental samples, which means that data is often lacking on residue levels in food and the environment, and existent data may not be reliable."
("Greenpeace Report - Not ready for Roundup: Glyphosate Fact Sheet," greenpeace.org - April 1997)
"Glyphosate is found in weed killers and may cause cardiovascular, gastrointestinal, nerve, and respiratory damage."
("Special Report: what you need to know about pest control," Natural Health Magazine, May/June 2001)
"Roundup®: Label - Keep out of reach of children, harmful if swallowed, avoid contact with eyes or prolonged contact with skin. Remove clothing if contaminated. Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas that may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. Avoid direct applications to any body of water. Do not contaminate water by disposal of waste or cleaning of equipment. Avoid contamination of seed, feed, and foodstuffs. Soak up a small amounts of spill with absorbent clay. Do not reuse container for any other purpose."
(Roundup - Label, farmcentral.com - June 2001)
"Monsano's advertising campaigns have convinced many people that Roundup® is safe, but the facts just don't support this. Independent scientific studies have shown that Roundup® is toxic to earthworms, beneficial insects, birds and mammals, plus it destroys the vegetation on which they

depend for food and shelter. Although Monsanto claims that Roundup® breaks down into harmless substances, it has been found to be extremely persistent, with residue absorbed by subsequent crops over a year after application. Roundup® shows adverse effects in all standard categories of toxicological testing, including medium-term toxicity, long-term toxicity, genetic damage, effects on reproduction, and carcinogenicity."
("Common Weed Killer (Roundup) Shows Evidence of Environmental and Health Problems," Organic Gardening, July 2000 - in www.chem-tox.com - 2002)
"Pharmacia Corporation owns Monsanto, and Monsanto makes Roundup® insecticide. (www.mercola.com - May 2002) The Pharmacia Corporation's core prescription pharmaceutical business claims to be a good citizen wherever they operate, and they are implementing a new, comprehensive system for managing environmental, safety, and health issues and has adopted a series of ESH standards to guide operations worldwide. (Pharmacia.com - May 2002) Some may question the ownership of a company that produces so many harmful chemicals to people, animals and plants. Roundup® accounts for half of Monsano's corporate profits says Organic Gardening, July 2000."
("Keep those pests away from school," Alternative Medicine magazine, March 2002)
"CHEMICAL SENSITIVITIES" - We are told that pesticides are one of the main causes and contributors to the emergence of chemical sensitivity. They are the perpetrators of the perfect crime, as they are almost everywhere and they are generally odorless. They can cause insidious or delayed, yet progressive symptoms even weeks after an exposure, once the threshold for an individual's tolerance has finally been exceeded.
("MCS: A Sensitive Issue," Environmental Health Perspectives, www.herc.org - Sept. 1994)
"One particularly dangerous, and frequently hidden, source of chemical exposure is the common practice of applying pesticides to apartment complexes, restaurants, schools, hospitals, and other public and private buildings without notifying the occupants. The disease may occur when the "total load" of biological, chemical, physical, and psychological stressors exceeds a critical threshold for a particular individual, and the sensitivity to one chemical, can then lead to being sensitive to another."
("Multiple Chemical Sensitivity," Ann McCampbell, M.D.)
Pesticides – 2,4-D and Roundup® (Glyphosate), Two of the (Supposedly) Safer Pesticides

SOURCE: June Russell's Health Facts

Link to the article: http://www.jrussellshealth.org/pests24d.html

Comment: *Ranger Gubel the USFS claims glyphosate containing herbicides (specifically Roundup®) are safe. This 2002 article in a Monsanto authored article called "Backgrounder – Glyphosate and Wildlife" (link below) claims glyphosate-containing herbicides will not harm: wild mammals, birds, aquatic animals, amphibians, insects and other terrestrial arthropods, earthworms and soil microorganisms. If this were true there would not be hundreds of independent scientists' research showing otherwise.*

Link: http://www.monsanto.com/products/Documents/glyphosate-background-materials/gly_wildlife_bkg.pdf

Ranger Gubel please do not attempt to discount this clear toxicity evidence by claiming the source documents for the scientists' statements are not "peer-reviewed", are just "opinions", or the chemicals are safe if used according to label directions. Remember, the label directions are authored by employees of the corporation that manufactures the chemical.

Please do not apply this deadly, toxic chemical to my land.

> ***Comment:*** *Ranger Gubel if you still insist on killing noxious weeds with herbicides containing glyphosate rather than the alternatives, the people paid to apply the chemical should be wearing complete hazmat suits and should be given a copy of* ***Attachment #9a and #18*** *before they are allowed t apply the herbicide. Any responsible employer would take measures to protect their employees.*
>
> ***Comment:*** *Ranger Gubel many plants in the forest have flowers that must be pollinated by bees to produce seeds and regenerate. When you kill bees by applying herbicides you interrupt and eradicate this natural process. Clearly, this is a significant adverse impact on the human environment. Thus, an EIS must be completed.*

Space does not permit including all articles showing glyphosate containing herbicides are extremely toxic. When I did an internet search on the two words ***glyphosate banned*** *I got 101,000 hits. See for yourself:*
http://www.bing.com/search?q=glyphosate+banned&src=IE-SearchBox&first=9&FORM=PERE

Remember:
Monsanto earned $937 million, or $1.74 per share, in the quarter ended in May 2012. Source:
http://finance.yahoo.com/news/monsanto-3q-profit-soars-maintains-view-122512083--finance.html

USDA Secretary Vilsack has such close ties to the biotech industry its frightening. Source:
http://articles.mercola.com/sites/articles/archive/2009/10/10/Obama-Monsanto-Alliance-Too-Close-for-Comfort.aspx

It's easy to figure out why glyphosate-safe documents have been written: ***MONEY!***

Last but not least, the courts require agencies to "consider important aspects of the problem."
Under the APA, a court may set aside an agency action if the court determines that the action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); see also Marsh, 490 U.S. at 375-77 (arbitrary and capricious standard applies to agency findings which involve agency expertise).
"Consequently, we may reverse the decision as arbitrary or capricious only if the agency relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, offered an explanation that ran counter to the evidence before the agency, or offered one that is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."
Source: ***SIERRA CLUB v. BOSWORTH****. An Appeal to 9th Circuit from the United States District Court for the Eastern District of California, Filed December 5, 2007*
Link to the decision: http://caselaw.findlaw.com/us-9th-circuit/1175742.html

Comment: *Of course Ranger Gubel after reading this material you are in denial. You believe that the USFS would approve nothing that might harm (or kill) the wildlife in the forest and the human visitors. Except for aquatic life, the killing will take time they won't die of cancer for a few years. Would you spray the weeds in your yard with Roundup® and allow your children or grandchildren to play in the same area?*

RESPONSE – Use of Roundup is approved by separate decision (Kootenai National Forest Invasive Plant Management ROD, April 2007). Roundup is an approved herbicide used according to label directions. Its use is limited to specific target species, applied as spot application. With the exception of isolated individual or small infestations, it is not anticipated that Roundup will be used within the

Spring Gulch project area. However, if specific target species are located, Roundup may be used according to label instructions.

COMMENT
Conclusion
Ranger Gubel, please Respond to the comments above in an honest, responsible, meaningful way. Treat my land like you would treat the land you own that will be passed down to your children and grandchildren. I doubt you would allow your land to be harmed to provide the opportunity for corporations to reap large short-term profit.

Comment: *The United States population is expected to reach 400 million in 27 years (2039). Children born at that time will find undeveloped public land to be a precious asset that* ***must*** *(emphasis added) never be manipulated by humans now with logging and road construction for short-term corporate profits. Indeed, your Spring Gulch timber sale project is a direct assault on the land these kids will own to satisfy the resource extraction corporations.*

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

RESPONSE – The commenter will receive notice when the DN/FONSI is available.

Artley part 3

Opposing Views, Attachment #1 Respected Scientists Reveal the Certainty that Natural Resources in the Forest are Harmed (and some destroyed) by Timber Harvest Activities

COMMENT (Dick Artley – attachment titled "part3_artley_attachment 1 Logging Harm")

Timber Harvest Opposing View #1 - *The following document contains pertinent color pictures showing logging damage, thus the article text is not shown here. Please use the link below to access the article.*

*Al-jabber, Jabber M. "**Habitat Fragmentation: Effects and Implications"***
Clearcuts and forest fragmentation, Willamette NF, Oregon.
From: Cascadia Wildland Project, Spring 2003

http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf

RESPONSE – This is a brief opinion paper which includes literature citations. The paper briefly discusses some basic elements of fragmentation and how such dynamics could possibly influence general suites of species, and species of concern. It is too generic to be of value in any site specific analyses, and is considered irrelevant to the decisions to be made. The Spring Gulch Timber Sale EA examines how habitat alterations could affect various species.

COMMENT (Dick Artley)

Timber Harvest Opposing View #2 - *"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.*

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."

*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.*

http://www.alliance-pipeline.com/contentfiles/45___Sediment_generation.pdf

RESPONSE – The citation presented by the commenter is a pipeline industry paper. The soils and hydrology sections of the EA addresses potential sediment delivery related to proposed ground disturbance. The analysis and disclosures are compliant with established Regional protocol, and reflect the best science in terms of understanding potential impacts to soil and water resources.

COMMENT (Dick Artley)

Timber Harvest Opposing View #3 - *"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)."

*"**Applying Ecological Principles to Management of the U.S. National Forests**"*
Issues in Ecology Number 6 Spring 2000
http://www.esa.org/science_resources/issues/FileEnglish/issue6.pdf

RESPONSE – The commenter appears to take this paper out of context. The primary thesis of the paper is captured by the following statement, taken from the paper:

Statement:

"We have identified major ecological considerations that should be incorporated in sound forest management policy and their potential impacts on current practice:
• 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 sites.
• Protection of water quality and yield and prevention of flooding and landslides call for greater attention to the negative impacts of logging roads and the value of undisturbed buffer zones along streams and rivers.
• Conservation of forest biodiversity will often require reducing forest fragmentation by clearcuts and roads, avoiding harvest in vulnerable areas such as hardwood or old growth stands and riparian zones, and restoring natural structural complexity to cutover sites.
• Planning at the landscape level is needed to address ecological concerns such as biodiversity, water flows, and forest fragmentation. Repeated overcutting of National Forests lands in the past has been linked to lack of planning at the landscape scale.
• Increasing pressures on forests due to human population growth and global change oblige land managers to be alert for climate- related stresses as well as damage from ground-level ozone, acid rain, and acidification of soils and watersheds.

The paper also states, "*Proposals to ban all timber harvesting on National Forests would leave managers without a valuable tool that can be used selectively to restore early successional habitat, reduce fuel loads, and contain pest and pathogen outbreaks in some forests".*

RESPONSE - All the principles described above apply to the Spring Gulch Timber Sale. The authors of this paper state support for active forest management to meet the above goals, and the commenter has taken this research out of context to support his argument.

COMMENT (Dick Artley)

Timber Harvest Opposing View #4 - *"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."*

*Barry, Glen, Ph.D. "**Commercial Logging Caused Wildfires**" Published by the Portland Independent Media Center, August 2002.*

http://portland.indymedia.org/en/2002/08/17464.shtml

RESPONSE – Conjecture and opinion, and irrelevant to the Spring Gulch Timber Sale proposal. No response is warranted.

COMMENT (Dick Artley)

Timber Harvest Opposing View #5 - *"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."*

"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.' "

"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."

*Barry, John Byrne. "**Stop the Logging, Start the Restoration**", from The Planet newsletter June 1999, Volume 6, Number 5*

http://www.sierraclub.org/planet/199905/ecl1.asp

RESPONSE – The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #6 - *"Federal auditors have found that the Forest Service frequently fails to assess, prevent or correct environmental damage from logging on the national forests.*

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.'

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.

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."

*Cushman, John H. Jr. "**Audit Faults Forest Service on Logging Damage in U.S. Forests**" New York Times, February 5, 1999*

http://query.nytimes.com/gst/fullpage.html?res=9B00E2DF163BF936A35751C0A96F958260&sec=&spon=&pagewanted=print

RESPONSE – This public media article discusses the results of specific BMP and stream side management guideline monitoring in the eastern part of the US, and is not related to the Spring Gulch project area, or the Kootenai National Forest. Region 1 and the Kootenai National Forest conduct periodic reviews of BMP compliance, and all projects are monitored. The EA includes appropriate BMPs and discloses potential environmental impacts to soil and water, as required by law, regulation and policy.

COMMENT (Dick Artley)

Timber Harvest Opposing View #7 - *"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."*

*Dombeck, Mike Ph.D. **"Through the Woods"***
The News Hour with Jim Lehrer. 19 June 1998.
http://www.pbs.org/newshour/bb/fedagencies/jan-june98/road_6-19.html

RESPONSE - In these transcripts from the Newshour with Jim Lehrer, the panel of participants discussed the potential impacts that an 18th month moratorium on road building in unroaded areas would have on the logging industry. The Idaho congressional delegation and industry representatives believe that the moratorium is political and will 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 other uses. This project does not propose road building. The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #8 - *"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."*

"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."

"Fifty years ago, Aldo Leopold wrote his seminal work, A Sand County Almanac. 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."

Dombeck, Mike Ph.D., a message on "Conservation Leadership" sent to all USFS employees on July 1, 1998

http://www.wvhighlands.org/VoicePast/VoiceAug98/Dombeck.Aug98.html

RESPONSE - In these transcripts from the Newshour with Jim Lehrer, the panel of participants discussed the potential impacts that an 18th month moratorium on road building in unroaded areas would have on the logging industry. The Idaho congressional delegation and industry representatives believe that the moratorium is political and will 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 other uses. This project does not propose road building. The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #9 - *"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."*

"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."

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.*

http://www.nativeforest.org/campaigns/public_lands/stb_5_30_02.htm

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RESPONSE - In 2003, 221 PhD-level scientists signed a letter to President Bush urging him to end commercial logging and road construction in National Forests and invest in forest restoration. They believe that protecting national forests creates more economic benefits than continued logging and

advocate a shift in federal funding of the timber sale program into a program that pays local contractors to restore national forests. The authors' recommendations regarding the Federal timber sale program are not specific to this project's site-specific environmental analysis. The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #10 - *"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."*

*"**Bush Fire Policy: Clearing Forests So They Do Not Burn**" FOREST CONSERVATION NEWS TODAY, August 27, 2002*

http://forests.org/archived_site/today/recent/2002/tiporefl.htm

RESPONSE – Opinion and conjecture. No response warranted.

COMMENT (Dick Artley)

Timber Harvest Opposing View #11 - *"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. (page 2)"*

"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)"

*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."***

http://www.coastrange.org/documents/forestreport.pdf

RESPONSE - This is a report by an NGO and not peer-reviewed literature. In it is a proposed approach to forest management to achieve watershed and forest health. Many of the concepts proposed are already in use by the Forest Service. The Spring Gulch Timber Sale project does not propose to protect forest values through logging, as stated in the excerpt. The purpose and need for the proposed salvage is described in the revised EA, Chapter 1, pages 3-4. The Spring Gulch Timber

Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #12 - *"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)*

"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)

*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*

http://www.coastrange.org/documents/forestreport.pdf

RESPONSE - Also, included in the paper is the following:

"*There is no agreement, however, on how best to incorporate the retention of large and old trees into policy and regulation. Proposed approaches have included diameter limits (cut no tree larger than "x"), age limits (cut no tree older than "x"), and leaving the top "x" percentile of the largest trees in the stand. One complication is that the definition of a large and old tree varies because of differences in species and site productivity. Hence, large-tree retention guidelines need to accommodate site-to-site variability. Here, once again, the PAGs can help provide appropriate site-based guidelines. Another complication is that removing large trees is sometimes necessary to achieve overall fuel treatment goals. Relatively large trees of shade-tolerant species such as white fir (those 21 inches or more in diameter at breast height) have developed on many productive mixed-conifer sites since fire suppression programs were instituted a century ago. These trees often provide the fuel ladders that put old-growth pine or giant sequoia trees at risk, as well as increasing overall stand canopy densities. Both conditions greatly increase the potential for stand replacement fires. Restoring characteristic fuel loadings and wildfire behavior, to say nothing of prescribed burning programs, often requires removal of some of these larger but relatively young trees.*"

The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands. The Forest Plan includes Inventoried Roadless Areas, Wilderness, Proposed Wilderness, Special Interest Areas, Natural

Research Areas, stream side buffers, etc. to establish and manage as reserve areas. Site specific silvicultural treatments are designed to meet specific objectives in the area to be treated.

COMMENT (Dick Artley)

Timber Harvest Opposing View #13 - *"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."*

"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.'"

*Giuliano, Jackie Alan, Ph.D. "**Fire Suppression Bush Style: Cut Down the Trees!**" Environmental News Service, 2008.*

http://www.ens-newswire.com/ens/aug2002/2002-08-23g.asp

RESPONSE – no relevance to the Spring Gulch Timber Sale project. The Spring Gulch project units with fuels objectives are designed to reduce the probability of extreme fire behavior within the treated areas. Full disclosure of the analysis of fire and fuels affects can be found in the EA, Chapter 3, pages 58-127.

COMMENT (Dick Artley)

Timber Harvest Opposing View #14 - *"Most of the trees that need to be removed to reduce accumulated fuels are small in diameter and have little or no commercial value."*

"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."

*Government Accounting Office, "**Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats**" GAO/RCED-99-65*

http://www.gao.gov/archive/1999/rc99065.pdf

RESPONSE – This citation is too general to be of value, or have relevance to the Spring Gulch project. The Spring Gulch Timber Sale project units with fuels objectives are designed to reduce the probability of extreme fire behavior within the treated areas. Full disclosure of the analysis of fire and fuels affects can be found in the revised EA, Chapter 3, pages 58-127.

COMMENT (Dick Artley)

Timber Harvest Opposing View #15 - *"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."*

"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)"

"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)"

***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.*
http://www.ncseonline.org/NLE/CRS/abstract.cfm?NLEid=215

RESPONSE - This report is an analysis and critique of the timber sale practices and procedures used by the Forest Service circa 1995 and analysis of alternatives to that system. Changes to the practices and procedures of the Forest Service timber sale system cannot be made or analyzed at the project level. The Spring Gulch Project does not propose the salvage of dead and dying lodgepole pine to improve forest health. Rather, the salvage is proposed to capture the product value of dead and dying lodgepole pine trees prior to deterioration in a timely manner. This project was analyzed by an interdisciplinary team comprised of members representing multiple resources. The team found no significant impacts to their respective resource. This can be found throughout Chapter 3 of the revised EA. The Spring Gulch Timber Sale is designed to be in compliance with the Kootenai National Forest Land and Resource Management Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #16 - *"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.' "

"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)."

"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."

"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."

*Hanson, Chad Ph.D., "**Commercial Logging Doesn't Prevent Catastrophic Fires, It Causes Them**." Published in the New York Times, May 19, 2000*

http://www.commondreams.org/views/051900-101.htm

RESPONSE – The Sierra Nevada Framework is specific to more dry (xeric) forest communities in California and not the inland Rockies. The proposed project is not intended to "prevent catastrophic fires" but to minimize the probability of extreme fire behavior within the treated areas.

COMMENT (Dick Artley)

Timber Harvest Opposing View #17 - *"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."*

*Hanson, Chad, Ph.D. "**Logging for Dollars in National Forests**", Special to The Sacramento Bee - November 14, 2001*

http://www.johnmuirproject.org/news-logging-for-dollars.html

RESPONSE – This is an opinion piece arguing against post-fire logging in old-growth stands in northern California. The author states that salvaging is an excuse to cut otherwise off-limits old-growth forests. Article cites literature that concludes post-fire logging does not reduce fire intensity in previously logged stands and that leaving large dead wood does not significantly increase the probability of a re-burn. The Spring Gulch Timber Sale does not proposed post-fire salvage, and is designed to be in compliance with the Kootenai National Forest Land and Resource Management

Plan (1987), and all other law, regulation and policy that relates to the Forest Service and management of National Forest System lands.

COMMENT (Dick Artley)

Timber Harvest Opposing View #18 - *"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 …"*

*Hanson, Chad Ph.D., "**Logging Industry Misleads on Climate and Forest Fires**." Guest Commentary in New West, July 11, 2008*

http://www.newwest.net/topic/article/logging_industry_misleads_on_climate_and_forest_fires/C41/L41/

RESPONSE – This citation is opinion and not relevant to the Spring Gulch Timber Sale. Fuel reduction goals in the project area are restricted to the treated areas themselves, and the safety of firefighting personnel.

COMMENT (Dick Artley)

Timber Harvest Opposing View #19 - *"Logging reduces the organic parent material (duff and woody residues) available for soil-formation processes."*

*Harvey, A. E., M. J. Larsen, and M. F. Jurgensen "**Distribution of Ectomycorrhizae in a Mature Douglas-fir/larch Forest Soil in Western Montana**" Forest Science, Volume 22, Number 4, 1 December 1976 , pp. 393-398(6)*

http://www.ingentaconnect.com/content/saf/fs/1976/00000022/00000004/art00007;jsessionid=l2sdf2hphia2.alexandra

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RESPONSE – This paper describes the mineral and organic composition of a soil developed from limestone parent material at a location 10 miles south of Glacier National Park in Montana. The authors measured active ectomycorrhizae associated with the various organic and mineral components of the soil, and found that five percent of the active ectomycorrhizae occurred in the mineral fraction, 66 percent in the humus, 21 percent in the decayed wood, and 8 percent in the charcoal. From this information, they conclude that soil organic matter is important in the formation and activity of ectomycorrhizae in Douglas fir/larch timber types found in Western Montana. They emphasize that their results should only be applied to mature forests and are not applicable to young or regenerating forests.

Neither the parent material (limestone) nor the habitat type (Douglas fir/larch) in the paper are present in the project area. The need to provide for organic matter is recognized in the revised EA, per the recommendations of Graham and others (1994), which are the guidelines cited in the Northern Region Soil Quality Standards (USDA Forest Service 1999). This research paper is a fundamental document in terms of understanding organic matter's role in the ecosystem and how to avoid detrimental impacts. The revised EA discusses soils, organic matter and potential impacts.

COMMENT (Dick Artley)

Timber Harvest Opposing View #20 - *"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 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."*

*Houston, Alan Ph.D., **"Why Forestry is in Trouble with the Public."** Evergreen magazine, October 1997.*

http://evergreenmagazine.com/web/Why_forestry_is_in_trouble_with_the_public-v2.html

RESPONSE – This is from the "quotable quote" section of the Evergreen Magazine. Though of interest, it has little relevance to the proposed actions associated with the Spring Gulch Timber Sale.

COMMENT (Dick Artley)

Timber Harvest Opposing View #21 - *"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.", H. R. 1494 text. April 4, 2001

http://www.agriculturelaw.com/legis/bills107/hr1494.htm

RESPONSE – This was a proposed law which was never moved forward, has no relevance to the Spring Gulch Timber Sale project. Citation is language from a proposed 2001 bill before the House of Representatives that did not become law. The USDA Forest Service Strategic Plan: 2007-2010 includes goals and objectives to maintain health, productivity, diversity and resistant to unnaturally severe disturbances and to provide a sustainable supply of goods and services, including wood fiber. The project is consistent with the Strategic Plan.

COMMENT (Dick Artley)

Timber Harvest Opposing View #22 - *"Human tampering with nature has not been without costs. Human manipulation of existing ecosystems has also sometimes had unfortunate consequences."*

*Hudak, Mike Ph.D. "**From Prairie Dogs to Oysters: How Biodiversity Sustains Us**" from his book review of The Work of Nature: How the Diversity of Life Sustains Us by Yvonne Baskin, 1997 Newsletter of Earth Day Southern Tier, February/March 1999, p. 2*

http://www.mikehudak.com/Articles/FromPrairieDogs9902.html

RESPONSE – The comment is not relevant to the proposed project. This reference is a book review. The two sentences quoted above are in two different headings. The first sentence is from a heading that mentions the introduction of gypsy moths, cheat-grass and goats. The second sentence is from a heading that then deals with soil fungi in Pacific Northwest clearcuts and monocultures, neither of which are relevant to this project.

COMMENT (Dick Artley)

Timber Harvest Opposing View #23 - *"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 > 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 > 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)*

"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 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."

*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.*

https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/4706/PB96155213.pdf;jsessionid=C8DDB611DB29D3716BBF313AADBA2E70?sequence=1

RESPONSE – The citation references the effects of logging, as a fuels treatment, on wildfire intensity and rates of spread. The Spring Gulch Timber Sale project is designed to reduce the probability of extreme fire behavior within the treated areas.

COMMENT (Dick Artley)

Timber Harvest Opposing View #24 - *"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."*

"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."

"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."

"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."

"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 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."

"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."

*Ingalsbee, Timothy Ph.D. "**Logging for Firefighting: A Critical Analysis of the Quincy Library Group Fire Protection Plan.**" Unpublished research paper. 1997.*
http://www.fire-ecology.org/research/logging-for-firefighting_2.htm

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RESPONSE – The Quincy Library legislation has no bearing on the Spring Gulch Timber Sale. The Spring Gulch Project is designed to reduce the probability of extreme fire behavior within the treated areas, and any fuel break effect from these treatments would be considered as secondary.

COMMENT (Dick Artley)

Timber Harvest Opposing View #25 - *"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."*

"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."

*Ingalsbee, Timothy Ph.D. 2000. "**Commercial Logging for Wildfire Prevention: Facts Vs Fantasies**"*

http://www.fire-ecology.org/citizen/logging_and_wildfires.htm

RESPONSE – This is an opinion piece in which the author describes why he believes commercial logging does not prevent wildfires. This project does not propose commercial logging to prevent wildfires. The Spring Gulch Timber Sale Project is designed to reduce the probability of extreme fire behavior within the treated areas.

COMMENT (Dick Artley)

Timber Harvest Opposing View #26 - *"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."*

*Ingalsbee, Timothy Ph.D. "**Logging without Limits isn't a Solution to Wildfires**" published in the Portland Oregonian, August 6, 2002*

http://www.klamathforestalliance.org/Documents/loggingwithoutlimits.html

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RESPONSE – This is an opinion article in a newspaper where the author describes those activities he does and does not view as appropriate to fuels reduction. This project does not propose clearcuts, and this comment is irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #27 - *"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)*

*Ingalsbee, Timothy Ph.D. "**The wildland fires of 2002 illuminate fundamental questions about our relationship to fire**." The Oregon Quarterly, Winter 2002*

http://fireecology.org/research/wildfire_paradox.pdf

RESPONSE – This project does not propose to remove fire resistant trees in the proposed treatment areas. This opinion piece is not relevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #28 - *"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."*

"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."

"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."

*Ingalsbee, Timothy Ph.D. **"Fanning the Flames! The U.S. Forest Service: A Fire-Dependent Bureaucracy."** Missoula Independent. Vol. 14 No. 24, June 2003*

http://www.fire-ecology.org/research/USFS_fire_dependent.html

RESPONSE – This is an opinion piece and is irrelevant to the decisions to be made. The citation references the effects of logging on "fuel hazards" and "fire risks". Slash created through harvest activities will be mitigated (revised EA, Chapter 2, page 6).

COMMENT (Dick Artley)

Timber Harvest Opposing View #29 - *"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."*

"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."

*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*

http://www.commondreams.org/news2005/0111-14.htm

RESPONSE - Opinion piece and irrelevant to the decisions to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #30 - *"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."*

"The impacts of land-use activities on wolverines are likely 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."

*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.*

http://www.capp.ca/getdoc.aspx?DocId=24902&DT=PDF

RESPONSE – This is a bibliography of papers, over 200 pages and it does not include an abstract of the papers. The quoted portion above deals with grizzly bears, which are not present in the analysis area. It goes on to say that effects are likely similar for wolverines. Analysis of the effects of this project on wildlife secure habitats and road density is found in the wildlife section of the revised EA.

COMMENT (Dick Artley)

Timber Harvest Opposing View #31 - *"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."

*Keene, Roy "**Logging does not prevent wildfires**" Guest Viewpoint, the Eugene Register Guard January 11, 2009*

http://www.highbeam.com/doc/1G1-192070397.html

RESPONSE – The Spring Gulch Timber Sale is not designed to prevent fires. Units with fuels objectives would be actively managed to reduce the probability of extreme fire behavior within the treated areas.

COMMENT (Dick Artley)

Timber Harvest Opposing View #32 - *"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.*

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?"

Keene, Roy ***Restorative Logging? "More rarity than reality"*** *Guest Viewpoint, the Eugene Register Guard March 10, 2011*

http://eugeneweekly.com/2011/03/03/views3.html

RESPONSE – Opinion piece and irrelevant to the decision to be made. An analysis of fire and fuels effects related to the proposed actions is included in the EA, Chapter 3, pages 37-58.

COMMENT (Dick Artley)

Timber Harvest Opposing View #33 - *"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, l983), and low-ground-pressure skidding (Sidle and Drlica, 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 increased bulk density in forest soils after harvest."*

*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*

http://www.fs.fed.us/psw/publications/ziemer/Ziemer94a.PDF

RESPONSE – This study is relevant and was considered. This peer-reviewed literature is an excellent source of data for analyzing effects of timber harvest on soils in the Pacific Northwest where terrain and climate are considerably different that of the project area. The logging systems, stand composition, and terrain are completely different than the proposed activity. The study does not account for the condition for the forests in the proposed project, some of which are dead and dying.

Regardless of the proposed actions, canopy and evapotranspiration are going to be affected as the stand changes over time and when trees die.

There is adequate information in the revised EA in both the soils section and the hydrology section, which discuss the effects the proposed activity will have on hydrologic systems. Increased bulk density and decreased hydraulic conductivity can occur with the ground-based harvest planned for the project; however, project design features and mitigation measures will minimize these potential effects. All harvest units would comply with the Northern Region Soil Quality Standards (USDA Forest Service 1999). A comprehensive, site-specific analysis of potential impacts to water and soil resources is included in the revised EA.

COMMENT (Dick Artley)

Timber Harvest Opposing View #34 - *"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)."*

"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."

Klein, Al 2004. ***Logging Effects on Amphibian Larvae Populations in Ottawa National Forest.***
http://www.nd.edu/~underc/east/education/documents/AKlein2004Pre-loggingsurveyofamphibianlarvaeinvernalpools.pdf

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RESPONSE – This is a student paper that looks at existing species composition of seven ponds in Michigan, some of which were to be included in a Forest Service timber sale area. The study looked at physical factors in the ponds (temperature, pH, size, etc.), species presence, and relative abundance. It speculated on potential impacts of timber harvest on the attributes of these ponds and the potential impacts to the species present. Of the species present, the paper speculated that the species potentially most impacted by timber harvest was a salamander species that used closed canopy forest habitats.

Wetlands are protected by Forest Plan Riparian Conservation Areas -there is no activity adjacent to these areas. Boreal Toads are not reliant on closed-canopy forest; they are found in a variety of places including forests, sagebrush, meadows and wetlands (Maxell 2004). An analysis of potential effects on amphibians is found in the revised EA. The revised EA includes an analysis of potential impacts to other aquatic species. Based on this analysis there would be no significant impacts to species of concern.

COMMENT (Dick Artley)

Timber Harvest Opposing View #35 - *"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."*

"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."

*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.*

http://frames.nacse.org/6000/6269.html

RESPONSE – The citation is a congressional report that summarizes a Congressional Research Service study of the effects of logging on wildfire risk. The direct and indirect effects of the proposed action in the fuels section of the revised EA state that the suppression action success, should a fire event occur, would be increased through firefighter production capabilities, due to the change in fuel model. It does not state that a risk of a wildfire event would be reduced, but rather that probability of extreme fire behavior within the treated areas would be reduced.

COMMENT (Dick Artley)

Timber Harvest Opposing View #36 - *"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."*

"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."

*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.*

http://www.nrdc.org/land/forests/tnl1201.asp

RESPONSE – This is the text from Congressional testimony, arguing against streamlined planning processes and expressing concern about potential impacts from it. It is irrelevant to the Spring Gulch Timber Sale project.

COMMENT (Dick Artley)

Timber Harvest Opposing View #37 - *"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.*

*Leitner, Brian. "**Logging Companies are Responsible for the California Wildfires**." The Democratic Underground, October 30, 2003.*

http://www.democraticunderground.com/articles/03/10/30_logging.html

RESPONSE – This is an opinion piece and is irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #38 - *"We concluded that commercial timber sales do not meet the criteria for forest restoration." (Pg. 11)*

*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.*
http://maps.wildrockies.org/ecosystem_defense/Resources_Species_Topics/Fire/Misuse%20of%20Fire%20Plan%20funds.pdf

RESPONSE – This is an audit report from the Office of Inspector General on the implementation of the National Fire Plan by the Forest Service in the Western Region. This citation could not be located. Fuels reduction is only a part of the objectives in the project area.

COMMENT (Dick Artley)

Timber Harvest Opposing View #39 - *"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."*

***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*

http://www.sciencemag.org/content/283/5410/1996.summary

RESPONSE – Sustainability is the foundation of forest management on the National Forest System. This article summarized the process to date (as of 1999) that a committee of scientists went through to prepare a report with recommendations to the Forest Service for updating the National Forest Management Act by incorporating them into upcoming draft regulations. The Forest Service will continue to follow all laws as mandated, including the Multiple Use Sustained Yield Act and the National Forest Management Act.

COMMENT (Dick Artley)

Timber Harvest Opposing View #40 - *"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."*

*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*

http://www.fs.fed.us/pnw/publications/pnw_gtr164/

RESPONSE – Applicable and considered. This paper presents the current (as of 1984) literature regarding the importance of coarse woody debris to soil biota along with other resources.
The full text of the abridged citation quoted above is as follows and is found on page 16 of the reference (emphasis added):

*"**Fallen trees harbor a myriad of organisms, from bacteria and actinomycetes to higher fungi.** Of these, only some of the fungi might be noticed by the casual observer as mushrooms or bracket fungi (fig. 16). These structures, however, are merely the fruiting bodies produced by mold colonies within the log. Many fungi fruit within the fallen tree, so they are seen only when the tree is torn apart (fig. 17). Even when a fallen tree is torn apart, only a fraction of the fungi present are noticed because the fruiting bodies of most appear only for a small portion of the year. **The smaller organisms, not visible to the unaided eye, are still important components of the system.**"*

Removing fallen trees is not part of the proposed action of this project. Coarse woody debris recruitment is provided for by the regional soil quality standards

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COMMENT (Dick Artley)

Timber Harvest Opposing View #41 - *"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)*

"Logging removes tree parts that would have created and maintained diversity in forest communities." (pg. 44)

*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*
http://www.fs.fed.us/pnw/publications/pnw_gtr229/

RESPONSE – Relevant and considered. This paper focuses on the importance of decaying coarse woody debris residues in providing diversity for ecosystem processes in Coastal Range of Oregon, a different ecosystem than that present in the project area. These specific citations are referring to the removal of fallen trees (not logging) which is not part of the proposed action. The first quoted citation above could not be found, either on page 5 as referenced or anywhere else in the document. The second citation reads fully as follows (emphasis added):

"Decaying, fallen trees contribute to long-term accumulation of soil organic matter, partly because the carbon constituents of well-decayed wood are 80-90 percent residual lignin and humus (Means and others 1985). Decaying wood in the soil and establishment of conifer seedlings and mycorrhizal fungi on dry sites are positively correlated (Harvey and others 1987). Fallen trees also create and maintain diversity in forest communities. Soil properties of pits and mounds differ from those of surrounding soil (Beatty and Stone 1985); such chemical and topographic diversity in turn affects forest regeneration processes (Lyford and MacLean 1966). All this, especially large fallen trees that reside on the forest floor for long periods, adds to spatial, chemical, and biotic diversity of forest soils, and to the processes that maintain long-term forest productivity."

Coarse woody debris recruitment is provided for by the regional soil quality standards and is discussed on page in the revised EA (Soils, Chapter 3, pages 169-197).

COMMENT (Dick Artley)

Timber Harvest Opposing View #42 - *"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."*

*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*

http://www.fs.fed.us/pnw/publications/pnw_gtr321/

RESPONSE - Relevant and considered. The paper looked at changes in habitat parameters over time in managed versus unmanaged river basins in eastern WA and OR. They concluded that generally habitats had become simplified in managed watersheds, but showed considerable variability between watersheds based on the history of development. The streams in the project area reflect the past history of human use in the watershed. The revised EA discusses the existing condition of aquatic habitats and states they are a result of past human activities (see Hydrology section of the EA).

COMMENT (Dick Artley)

Timber Harvest Opposing View #43 - *"Logging practices can indirectly result in changes in the biological components of a stream, and can have direct and indirect on the physical environment in streams.*
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."

*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.*

http://www.for.gov.bc.ca/hfd/library/ffip/Moring_JR1975b.pdf

RESPONSE – This paper looked at the effects of different logging treatments over a 15-year period in a coastal OR watershed. Findings included the positive effects of riparian buffers in maintaining water temps and DO levels, although it documented sediment increases related to road construction. The watershed with the most pronounced impacts was completely clearcut, with no buffers and yarding through and across the stream. The Spring Gulch Timber Sale project maintains substantial riparian buffers and proposes low levels of harvest in the watershed. The revised EA includes a comprehensive analysis of potential environmental impacts to water resources and fish species.

COMMENT (Dick Artley)

Timber Harvest Opposing View #44 - *"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."*

"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."

"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."

*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.*

http://www.esa.org/science_resources/issues/TextIssues/issue4.php

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RESPONSE – Relevant and considered. This report provides an overview of ecosystem functioning, reviews the distinction between taxonomic biodiversity and functional diversity, and evaluates the current status of research concerning ecosystem responses to changes in diversity. Analysis by the interdisciplinary team members shows the proposed activities in the project area would have minimal impact on biodiversity, described in the environmental consequences sections for each resource.

COMMENT (Dick Artley)

Timber Harvest Opposing View #45 - *"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."*

Nappier, Sharon. ***Lost in the Forest: How the Forest Service's Misdirection, Mismanagement, and Mischief Squanders Your Tax Dollars****. Taxpayers for Common Sense, 2002.*

http://www.ourforests.org/fact/lostintheforest.pdf

RESPONSE – Opinion piece and irrelevant to the decision to be made. This article cited is an opinion paper offering review and comment regarding the road maintenance backlog on National Forest System lands, the costs associated with the construction of new logging roads, the taxpayer's subsidies for road construction and the Forest Service inability to provide data that displays the cost of its timber sale program. The author describes as "chronicled waste, fraud, and fiscal abuse at the agency". The citation from Mr. Artley is taken from the executive summary of the document and refers to the Bush administration's failure to address road maintenance while advancing an agenda that promotes new road construction. The article also cites a 2001 GAO report associated with the cost of the timber sales program. In the article, the Forest Service commented that they will be implementing a new accounting system to track and evaluate the timber sale program.

In the article five recommendations were made to the Forest Service, they are as follows:

1. That the Forest Service release financial records for the timber program on an annual basis.
2. That the Forest Service reform its budget priorities
3. That the Forest Service focus on road maintenance
4. That the Forest Service institute a sealed bid process for timber sales and
5. That the Forest Service Support the Roadless Area Conservation Rule

This article is not relevant to the Spring Gulch Timber Sale project as the above recommendations are National in scale and deal with Forest Service policy at the Washington Office level.

COMMENT (Dick Artley)

Timber Harvest Opposing View #46 - *"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."*

Noble, Ian R. and Rodolfo Dirzo Ph.D. "Forests as Human-Dominated Ecosystems." *Science Vol. 277. No. 5325, pp. 522 - 525. 25 July 1997.*

http://www.sciencemag.org/content/277/5325/522.abstract?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=logging&searchid=1136659907310_5043&FIRSTINDEX=0&journalcode=sci

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RESPONSE – Relevant and considered. This article discusses the change in and loss of forested acres on a world-wide scale, different types of forest management practices, and the use of sustainable forestry. Full quote (emphasis added):

"*Forests are human-dominated ecosystems. Many of the seemingly lightly managed or unmanaged forests are actually in use for agroforestry or for hunting and gathering. Agroforestry does reduce biodiversity,* ***but it can also act as an effective buffer to forest clearance and conversion to other land uses, which present the greatest threat to forested ecosystems****. 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.* "

COMMENT (Dick Artley)

Timber Harvest Opposing View #47 - *"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."*

"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."

"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."

"For example:

- *82 percent wanted to ban clearcutting,*
- *82 percent said logging should not hurt scenic beauty,*
- *80 percent of the respondents wanted to protect remaining undisturbed forest; and*
- *72 percent urged prohibition of logging if bear or other wildlife habitat would be harmed."*

"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."

"'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'."

*Northup, Jim. 1999. "**Public Wants More Wilderness, Less Logging on Green Mountain NF**". Press Release by Forest Watch, a Vermont-based environmental organization.*

http://www.forestwatch.org/content.php?id=10

RESPONSE – Irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #48 - *"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."*

"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."

*Okoand Ilan Kayatsky, Dan. "**Fight Fire with Logging?**" Mother Jones, August 1, 2002*

http://motherjones.com/politics/2002/08/fight-fire-logging

RESPONSE – Opinion piece and irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #49 - *"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.*

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.

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."

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 Association of American Geographers. Sep. 8, 2006*

http://www.ingentaconnect.com/content/routledg/anna/2006/00000096/00000003/art00001

RESPONSE – The excerpt provided is referring to using thinning to reduce the threat of wildfire and restore historic forest structure. This link leads a page where the referenced citation can only be read when purchased. The full reference was not found in any other location by either the Forest Service or the commenter, thus this review is based solely on the excerpt provided in the comment.

This excerpt states the study evaluates areas "… in the ponderosa-pine dominated montane forest zone of Boulder County, Colorado." The Spring Gulch project area is located in Sanders County, Montana, in grand fire and Douglas-fir habitat types.

COMMENT (Dick Artley)

Timber Harvest Opposing View #50 - *"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."*

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.*

http://www.fs.fed.us/rm/pubs_rm/rm_gtr234.html

RESPONSE – Irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #52 - *"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 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.*

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.

The Act to Save America's Forests will:

- *Make the preservation and restoration of native biodiversity the central mission of Federal forest management agencies.*
- *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.*
- *Protect sensitive riparian areas and watershed values by banning extractive logging in streamside buffer zones.*
- *End clearcutting and other even age logging practices on federal land.*
- *Establish a panel of scientists to provide guidance to federal forest management.*

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 or survival and recovery into the 21st century and beyond."

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.

http://www.saveamericasforests.org/resources/Scientists.htm

RESPONSE – Opinion and irrelevant to the decision to be made. The project is in an area that has been managed in the past. The project does not propose clearcutting, is not in an inventoried roadless areas or areas with outstanding biological value, includes design features for conservation of riparian areas, and increases landscape diversity.

COMMENT (Dick Artley)

Timber Harvest Opposing View #53 - *"The Act to Save America's Forests is based on the principles of conservation biology. It would make the protection 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.*

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."

Raven, Peter, Ph.D., from his February 9, 2001 letter to Senator Jean Carnahan
http://www.saveamericasforests.org/Raven.htm

RESPONSE – Irrelevant to the decision to be made. Citation is from a letter that supported the 2001 proposed Act to Save America's Forests Legislation. According to the letter, the Act would have ended logging in all the remaining Northwest Ancient Forests, ended logging in all remaining roadless forests, and ended logging in "special" forest areas throughout the federal forest system, such as the giant Sequoia forests in California. In addition, the Act would have banned clearcutting in the national forests. The proposed legislation did not become law. Thus this article is not relevant to the site-specific Spring Gulch Timber Sale project environmental analysis.

The USDA Forest Service Strategic Plan: 2007-2010 includes goals and objectives to maintain health, productivity, diversity and resistant to unnaturally severe disturbances and to provide a sustainable supply of goods and services, including wood fiber. The Spring Gulch project is consistent with the Strategic Plan.

COMMENT (Dick Artley)

Timber Harvest Opposing View #54 - *"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 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)."*

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
http://www.plantsocieties.org/PDFs/Fire%20letter%20CNPS%208.02%20letterhead.pdf

RESPONSE – This California Native Plant Society letter argues that the lack of logging has not resulted in more severe fires across the western half of the US. The group supports active forest stand management, in terms of both mechanical alteration and use of prescribed fire. Their stance seems logical and is considered applicable and relevant. It is too general in nature to provide useful, site-specific input.

COMMENT (Dick Artley)

Timber Harvest Opposing View #55 - *"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."

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.

http://webcache.googleusercontent.com/search?q=cache:QNy_aih1RxEJ:edennapa.org/thp/roelofstestimony.doc+%22timber+harvest%22+ph.d.+adverse&hl=en&ct=clnk&cd=5&gl=us

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RESPONSE – Testimony on issues settled by the Supreme Court (March 2013) and irrelevant to the decision to be made. Citation is testimony given before the California State Water Board and Regional Water Quality Control Boards regarding waivers of waste discharge requirements on timber harvest plans. It is not peer-reviewed literature. The points being made are that timber harvest activities can result in adverse impacts to habitat characteristics important to salmonids - primarily through increased levels of fine sediment inputs, reductions in large woody debris inputs, changes to streamflow regimes and increases in water temperatures.

The Forest Plan acknowledges the potential impacts and has included Riparian Habitat Conservation Areas (RHCAs) into the Plan. These riparian buffers vary in width depending on the classification of the waterbody. On fish-bearing streams, these are 300 feet wide on either side of the channel. The RHCAs provide for: stream shade to limit solar inputs to the stream and moderate water temperatures, trees to recruit into the streams to provide habitat complexity and sediment trapping and an undisturbed vegetative filter strip to limit sediment inputs.

COMMENT (Dick Artley)

Timber Harvest Opposing View #56 - *"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 of these public lands is related to protecting and preserving them."*

*Rudzitis, Gundars. 1999 "**Amenities Increasingly Draw People to the Rural West"** Rural Development Perspectives, vol. 14, no. 2*

http://www.ers.usda.gov/publications/rdp/rdpsept99/rdpsept99b.pdf

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RESPONSE – Of interest, but not applicable to the Spring Gulch Timber Sale project. The paper discusses findings from survey research that assess why people move from counties throughout the

American west and specifically the Northwest. With respect to federal land management, most surveyed favored protection strategies, with an emphasis on good stewardship; and commodity production allowed on federals lands that are not degraded. The research does not provide site-specific analysis pertinent to the Spring Gulch Timber Sale project, which implements Forest Plan direction on the Kootenai National Forest in Montana.

COMMENT (Dick Artley)

Timber Harvest Opposing View #57 - *"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.*

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.

*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*

http://www.markscott.biz/papers/grays/chapter1.htm

RESPONSE – General paper, from a Master's thesis, and irrelevant to the Spring Gulch Timber Sale proposal. The Spring Gulch Timber Sale project does not include clearcutting.

COMMENT (Dick Artley)

Timber Harvest Opposing View #58 - *"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."*

*Short, Brant, Ph.D. and Dayle C. Hardy-Short Ph.D., "**Physicians of the Forest": A Rhetorical Critique of the Bush Healthy Forest Initiative**" Electronic Green Journal, Issue #19, **December 2003***

http://escholarship.org/uc/item/4288f8j5

RESPONSE – Conjecture and not supported by science.

COMMENT (Dick Artley)

Timber Harvest Opposing View #59 - *"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.*

(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.)

"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."

*Sierra Club. 2005 "**Ending Commercial Logging on Public Lands**"*
http://northcarolina.sierraclub.org/pisgah/conservation/ecl.html

RESPONSE – Opinion and irrelevant to the decision to be made.

COMMENT (Dick Artley)

Timber Harvest Opposing View #60 - *"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."*

*Slaymaker, Olav Ph.D. "**Assessment of the Geomorphic Impacts of Forestry in British Columbia**" AMBIO: A Journal of the Human Environment 29(7):381-387. 2000*

http://www.bioone.org/doi/abs/10.1579/0044-7447-29.7.381

RESPONSE – Generic, but applicable as general information. Not site-specific to the Spring Gulch Timber Sale project, nor is it research. It appears the focus of the referenced paper is a perspective on

implications of British Columbia's current policy for sustainable land management. It is widely recognized that forest management activities can influence hydrologic processes and functions that can affect terrain stability and watershed response. The revised EA includes a comprehensive analysis of hydrologic processes and potential impacts.

COMMENT (Dick Artley)

Timber Harvest Opposing View #61 - *"In sum, 100 years of fire suppression and logging have created conditions that threaten central Oregon's natural resources and communities."*

"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."

*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*

http://www.propertyrightsresearch.org/2004/articles6/testimony_of_andy_stahl.htm

RESPONSE – A treatise on the Healthy Forest Initiative. Opinion and not relevant to the decision to be made.

COMMENT (Dick Artley)
Timber Harvest Opposing View #62 - *"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.*

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.

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."

*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*

http://www.commondreams.org/scriptfiles/views03/1031-10.htm

RESPONSE – This opinion piece champions the stance that active management of forests is unacceptable. Conjecture and not supported by science.

COMMENT (Dick Artley)

Timber Harvest Opposing View #63 - *"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)*

"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)

"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)

"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.[5] 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.[6] This can lead to weaker, more densely-packed forests." (pgs. 19-20)

"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)

*Taxpayers for Common Sense. "**From the Ashes: Reducing the Harmful Effects and Rising Costs of Western Wildfires**" Washington DC , Dec. 2000*

http://www.ourforests.org/fact/ashes.pdf

RESPONSE – The Spring Gulch Timber Sale project is not designed to eliminate fires. Units with fuels objectives near privately owned land are designed to minimize the probability of extreme fire behavior within the areas proposed for treatment.

COMMENT (Dick Artley)

Timber Harvest Opposing View #64 - *"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."*

Thomas, Craig. "Living with risk: Homeowners face the responsibility and challenge of developing defenses against wildfires." Sacramento Bee newspaper, July 1, 2007.
http://www.sierraforestlegacy.org/NR_InTheNews/SFLIP_2007-07-01_SacramentoBee.php

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RESPONSE – Opinion piece and not salient to the Spring Gulch Timber Sale project, which certainly does not propose indiscriminate logging. The revised EA includes a comprehensive analysis of fire and fuels.

COMMENT (Dick Artley)

Timber Harvest Opposing View #65 - *"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)*

*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.*

http://ceres.ca.gov/snep/pubs/web/PDF/v1_ch04.pdf

RESPONSE – This citation could not be located.

COMMENT (Dick Artley)

Timber Harvest Opposing View #67 - *"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."*

*Vincent, James W. Ph.D., Daniel A. Hagen, Ph.D., Patrick G. Welle, Ph.D. and Kole Swanser. 1995. **Passive-Use Values of Public, Forestlands: A Survey of the Literature.** A study conducted on behalf of the U.S. Forest Service.*

http://www.icbemp.gov/science/vincent.pdf

RESPONSE –This article cited is an opinion paper offering review and comment regarding the state of economic research pertaining to the nonuse or passive values of forests. The article addresses the implication of the many studies relating to the management of public forestlands in the Columbia River Basin in particular and forests of the Pacific Northwest. This article illustrates that timber harvesting, for example, produces economic goods primarily in the form of wood products. On the other hand, forestlands are managed for recreation opportunities, watershed protection, and biodiversity, and these goods provide a value, which can be characterized as passive-use values. The article identifies valuation methods for estimating the economic value of environmental goods. The article reviews four studies that attempt to estimate the total value derived from both use and passive-use values and identifies the strengths and weaknesses of each study.

The article concludes that economic research should not ignore passive use values and by ignoring these values future studies may seriously understate the benefits associated with the preservation of wilderness areas, wildlife, old forests, and other goods associated with preservation. In the absence of

this information, the only conclusions that one is able to reach would be very general in nature. This article is not relevant to the project since it simply offers opinion regarding the development of future economic studies and that the methodological estimations used in future studies should not ignore the importance of passive-use values.

COMMENT (Dick Artley)

Timber Harvest Opposing View #68 - *"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 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.*

Ironically, this very type of logging, experts inform us, is likely to increase, not decrease, the frequency and severity of wildland fires.

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.' "

*Voss, René, "**Getting Burned by Logging**," July 200, The Baltimore Chronicle*

http://www.baltimorechronicle.com/firelies_jul02.shtml

RESPONSE – Opinion, and irrelevant. The Spring Gulch Timber Sale project does not propose removing old growth trees.

COMMENT (Dick Artley)

Timber Harvest Opposing View #69 - *"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."*

*Wuerthner, George. "**Logging, thinning would not curtail wildfires**" The Eugene Register-Guard, December 26, 2008*

http://wuerthner.blogspot.com/2008/12/logging-thinning-would-not-curtail.html

RESPONSE – Opinion letter and too general to be applicable to the project.

COMMENT (Dick Artley)

Timber Harvest Opposing View #70 - *"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."*

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."

*Wuerthner, George "**Who Will Speak For the Forests?**" NewWest, January 27, 2009*

http://www.newwest.net/topic/article/who_will_speak_for_the_forests/C564/L564/

RESPONSE - Opinion paper and too general to be applicable to the project. This is an opinion paper, not peer-reviewed literature.

COMMENT (Dick Artley)

Timber Harvest Opposing View #71 - *"After logging, peak pipeflow was about 3.7 times greater than before logging."*

"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)."

*Ziemer, Robert R. Ph.D., **"Effect of logging on subsurface pipeflow and erosion: coastal northern California, USA."** Proceedings of the Chengdu Symposium, July 1992. IAHS Publication. No. 209, 1992*

http://www.fs.fed.us/psw/publications/ziemer/Ziemer92.PDF

RESPONSE – Applicable. Potential peak flow increases are analyzed in the revised EA, Water Resources section.

COMMENT (Dick Artley)

Timber Harvest Opposing View #72 - *"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."*

"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."

"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."

From an April 16, 2002 letter to President Bush asking him to stop all logging in the national forests.

http://www.forestwatch.org/content.php?id=108

Note: After the link has been opened, scroll to the bottom and follow the link to "Scientist's No Logging Letter.pdf 64KB" This will show the complete letter and the signatories.

The names of the 221 Ph.D. level scientists that signed the letter are: (omitted here for clarity – full names and addresses are retained in the project file).

RESPONSE – Irrelevant to the Spring Gulch Timber Sale project.

COMMENT (Dick Artley)

Comment: *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.*

RESPONSE – No response warranted.

COMMENT (Dick Artley)

Timber Harvest Opposing View #73 - *"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.*

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.

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."

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 April 28, 1998, U.S. Capitol

http://www.saveamericasforests.org/news/ScientistsStatement.htm

RESPONSE – This is a general opinion and not relevant to the project or project area.

COMMENT (Dick Artley)

Timber Harvest Opposing View #74 - "CONCLUSIONS

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.

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."

Elliot, W.J.; Page-Dumroese, D.; Robichaud, P.R. 1999. The effects of forest management on erosion and soil productivity. ***Proceedings of the Symposium on Soil Quality and Erosion Interaction,*** *Keystone, CO, July 7, 1996. Ankeney, IA: Soil and Water Conservation Society. 16 p.*

http://forest.moscowfsl.wsu.edu/smp/docs/docs/Elliot_1-57444-100-0.html

RESPONSE – A general overview of soil productivity science and generalizations regarding potential effects from common forestry practices. The revised EA (pages 3-169 to 3-197) includes a comprehensive analysis of potential impacts to soil resources. This citation is applicable and was considered.

COMMENT(s) – (Artley - "Attachment 11 Cohen")

"*Any NEPA document that analyzes treatments to reduce the risk of fire damage to home located in the WUI must analyze a Dr. Jack Cohen alternative in detail."*

RESPONSE – *NOTE*: *The commenter then presents 17 pages of excerpts from various Cohen authored papers laying out an argument that the only way to protect structures is to focus fuel reduction and structure fire design in the Home Defense Zone (a specific distance from the structure).*

This entire 17 page attachment is irrelevant to the decision to be made. The Spring Gulch Timber Sale is not designed to directly protect structures on privately owned land. In those units with specific fuel management goals, the objective is to reduce and disrupt fuel continuity, and manage stand density and species composition in order to reduce the probability of extreme fire behavior within the stands that would be treated. The "Dr. Jack Cohen" alternative that focuses only on treating fuels within 40 yards of homes and home design criteria would fail to address the purpose and need for this project.

Dick Artley, Attachment – "Part 3, Fuels Reduction Ineffective"

Opposing Views
Attachment #3
Harvesting Trees to Reduce Fuels is not only Ineffective at Reducing the Risk of Fire Damage to Human Structures but Harms the Forest Ecosystem

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COMMENT – (Artley)

Fuels reduction Opposing View #1 - *"large, severe* ***wildfires*** *are more* ***weather****-dependent than fuel-dependent,"*

*Agee, James K. Ph.D. "****The Severe Weather Wildfire-Too Hot to Handle?*** *Northwest Science, Vol. 71, No. 1, 1997*
http://www2.for.nau.edu/courses/pzf/FireEcolMgt/Agee_97.pdf

RESPONSE – Applicable**.** The Spring Gulch Timber Sale units with fuel reduction goals are designed to reduce the probability of extreme fire behavior within the proposed treatment units. Weather is only one of the primary determinants of fire behavior; the other two are fuel and oxygen.

COMMENT -

Fuels reduction Opposing View #2 - *"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."*

*Barry, Glen, Ph.D. "****Commercial Logging Caused Wildfires****" Published by the Portland Independent Media Center, August 2002.*

http://portland.indymedia.org/en/2002/08/17464.shtml

RESPONSE – Opinion. Conjecture, not supported by science. Not applicable to the project.

COMMENT -

Fuels reduction Opposing View #3 - *"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)*

*Berry, Alison Ph.D., 2007. "**Forest Policy Up in Smoke: Fire Suppression in the United States**." A PERC publication.*

http://www.law.northwestern.edu/searlecenter/papers/Berry_forest_policy.pdf

RESPONSE - The Spring Gulch Timber Sale units with fuel reduction goals are designed to reduce the probability of extreme fire behavior within the proposed treatment units. Weather is only one of the primary determinants of fire behavior; the other two are fuel and oxygen. Also, there is no project objective to return all forests to historic states.

COMMENT -

Fuels reduction Opposing View #4 - *"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."*

*Bessie, W. C. Ph.D. and E. A. Johnson Ph.D. "**The Relative Importance of Fuels and Weather on Fire Behavior in Subalpine Forests**" Ecology, Vol. 76, No. 3 (Apr., 1995) pp. 747-762. Published by: Ecological Society of America*

http://www.jstor.org/pss/1939341

RESPONSE – Applicable and relevant. Considered for the Spring Gulch Timber Sale project.

COMMENT -

Fuels reduction Opposing View #5 - *"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."*

"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."

*Bird, Bryan "**Fires Normal Part of Ecology - Fear of fires ungrounded**" Mountain View Telegraph, December 20, 2007*

http://www.wildearthguardians.org/library/paper.asp?nMode=1&nLibraryID=567

RESPONSE – Opinion**.** Irrelevant to the decision to be made. The revised EA includes an analysis of potential issues related to fire and fuels (Chapter 3).

COMMENT -

Fuels reduction Opposing View #6 - *"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."*

*"**Bush Fire Policy: Clearing Forests So They Do Not Burn**" FOREST CONSERVATION NEWS TODAY, August 27, 2002*

http://forests.org/archived_site/today/recent/2002/tiporefl.htm

RESPONSE – Opinion. Conjecture and not supported by science.

COMMENT -

Fuels reduction Opposing View #7 - *"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."*

Coe, Nathan J. ***"Forestry shouldn't be an 'industry'*** *Durango Herald, February 12, 2011*

http://www.durangoherald.com/article/20110213/OPINION03/702139987/Forestry-shouldn%E2%80%99t-be-an-%E2%80%98industry%E2%80%99

RESPONSE – Opinion.

COMMENT -

Fuels reduction Opposing View #8 - *"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."*

Forest Policy Research paper ***2008*** *"Montana: Blackfoot Clearwater Stewardship Proposal is all about selling out to Pyramid lumber"*

http://forestpolicyresearch.org/2008/12/19/blackfoot-clearwater-stewardship-proposal-is-all-selling-out-to-pyramid-lumber/

RESPONSE – Opinion. Not relevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #9 - *"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."*

Forest Policy Research paper ***2008*** *"**California: Too often thinning treatments tend to increase fire hazards**"*

http://forestpolicyresearch.org/2008/12/19/california-too-often-thinning-treatments-tend-to-increase-fire-hazards/

RESPONSE - The Spring Gulch Timber Sale units with fuel reduction goals are designed to reduce the probability of extreme fire behavior within the proposed treatment units. Weather is only one of the primary determinants of fire behavior; the other two are fuel and oxygen.

COMMENT -

Fuels reduction Opposing View #10 - *"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."*

"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."

*Frey, David "**Logging Won't Halt Beetles, Fire, Report Says**" NewWest.net, 3-03-10*

http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/

RESPONSE – The issue of bark beetles and their relationship to fire behavior is not a primary consideration in the Spring Gulch Timber Sale project. The report is irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #11 - *"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."*

*Gable, Eryn "**Battling beetles may not reduce fire risks – report**" The Xerces Society Land Letter, March 4, 2010*
http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/

RESPONSE - The issue of bark beetles and their relationship to fire behavior is not a primary consideration in the Spring Gulch Timber Sale project. The report is irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #12 - *"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."*

Gorte, Ross W. Ph.D.
"Wildfire Damages to Homes and Resources: Understanding Causes and Reducing Losses"
A CRS report for Congress, June 2, 2008
http://www.nationalaglawcenter.org/assets/crs/RL34517.pdf

RESPONSE – This is a single statement taken from a document and is out of context. The cited report aims to review and summarize then current issues in fire hazard management, and is applicable to this project, though so generalized as to be of limited value. The cited document is irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #13 - *"Most of the trees that need to be removed to reduce accumulated fuels are small in diameter and have little or no commercial value."*

"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."

Government Accounting Office "**Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats**" *GAO/RCED-99-65*
http://www.gao.gov/archive/1999/rc99065.pdf

RESPONSE - This report recommends the "development of a cohesive strategy to reduce accumulated fuels on national forests of the interior West in an effort to limit the threat of catastrophic wildfire". It is considered applicable to the Spring Gulch Timber Sale project, though so generic and broad scale in nature as to be of limited value.

COMMENT -

Fuels reduction Opposing View #14 - *"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.' "*

"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)."

"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."

"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."

Hanson, Chad Ph.D., "**Commercial Logging Doesn't Prevent Catastrophic Fires, It Causes Them**." Published in the *New York Times*, May 19, 2000

http://www.commondreams.org/views/051900-101.htm

RESPONSE – Opinion. Conjecture and not supported by science. Irrelevant to the decision to be made. The revised EA includes a comprehensive analysis of fire and fuels issues related to the proposed actions.

COMMENT -

Fuels reduction Opposing View #15 - *"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.*

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."

Hermach, Tim. "**The Skinny on Thinning, Should we save the forest from itself**?" Published by the *Eugene Weekly Viewpoint*, 11/1/07

http://www.forestcouncil.org/tims_picks/view.php?id=1211

RESPONSE – Opinion and irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #16 - *"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 > 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 > 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)*

"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 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."

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.

https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/4706/PB96155213.pdf;jsessionid=C8DDB611DB29D3716BBF313AADBA2E70?sequence=1

RESPONSE – Considered so generic and broad scale in nature as to be of limited value to this project and the associated analysis.

COMMENT -

Fuels reduction Opposing View #17 - *"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."

"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."

Ingalsbee, Timothy Ph.D. 2000. "**Commercial Logging for Wildfire Prevention: Facts Vs Fantasies**"

http://www.fire-ecology.org/citizen/logging_and_wildfires.htm

RESPONSE – Opinion.

COMMENT -

Fuels reduction Opposing View #18 - *"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)."*

Ingalsbee, Timothy Ph.D. 2000. "**Money to Burn: The Economics of Fire and Fuels Management, Part One: Fire Suppression**. "An American Lands Alliance publication.
www.fire-ecology.org/research/money_to_burn.html

RESPONSE – Opinion.

COMMENT -
Fuels reduction Opposing View #19 - *"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 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."*

Ingalsbee, Timothy Ph.D., "**National Fire Plan Implementation: Forest Service Failing to Protect Forests and Communities**" American Lands Alliance, March 2002
http://www.fire-ecology.org/policy/ALA_fire_policy_2002.html

RESPONSE – Opinion.

COMMENT -

Fuels reduction Opposing View #20 - *"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)*

Ingalsbee, Timothy Ph.D. "**The wildland fires of 2002 illuminate fundamental questions about our relationship to fire**." *The Oregon Quarterly*, Winter 2002
http://fireecology.org/research/wildfire_paradox.pdf

RESPONSE – Opinion. This author seems to equate all timber harvest with the removal of the largest, most fire-adapted trees. This is not applicable to the Spring Gulch Timber Sale project.

COMMENT -

Fuels reduction Opposing View #21 - *"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."*

"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."

"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."

Ingalsbee, Timothy Ph.D. **"Fanning the Flames! The U.S. Forest Service: A Fire-Dependent Bureaucracy."** *Missoula Independent.* Vol. 14 No. 24, June 2003
http://www.fire-ecology.org/research/USFS_fire_dependent.html

RESPONSE – Opinion.

COMMENT -

Fuels reduction Opposing View #22 - *"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."*

"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."

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
http://www.commondreams.org/news2005/0111-14.htm

RESPONSE – Opinion and generic in nature. Conjecture and not supported by science.

COMMENT

Fuels reduction Opposing View #23 - *"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."*

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

http://fusee.org/docs/AFE_FUSEE_display_abstract.pdf

RESPONSE – Conjecture and not supported by science. The author defines timber harvest as removal of the largest, most fire-resistant trees from the stand. The Spring Gulch Timber Sale does not propose such silvicultural treatment. Rather, the proposed treatments would focus on removal of shade-tolerant, early seral, smaller diameter trees in the stands. The cited paper is not based on research and is an expression of opinion by an author with a history of voicing opinion against logging on federal lands.

COMMENT -

Fuels reduction Opposing View #24 - *"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."

Keene, Roy "**Logging does not prevent wildfires**" Guest Viewpoint, the Eugene *Register Guard* January 11, 2009
http://www.highbeam.com/doc/1G1-192070397.html

RESPONSE – Opinion and not supported by science. The Spring Gulch Timber Sale project is not designed to "prevent forest fires". Analyses of potential environmental impacts, including vegetation, fire and fuels, are included in the revised EA.

COMMENT -

Fuels reduction Opposing View #25 - *"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.*

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?"

Keene, Roy **Restorative Logging? "More rarity than reality"** Guest Viewpoint, the Eugene *Register Guard* March 10, 2011 **http://eugeneweekly.com/2011/03/03/views3.html**

RESPONSE - Opinion and not supported by science.

COMMENT -

Fuels reduction Opposing View #26 - *"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.*

Drought, wind, and low humidity, not fuels loads, drive large wildfires. Weather and climatic conditions are also the driving force behind expanding insect populations."

Kelly, Steve Ph.D. 2007. "**Cheap Chips, Counterfeit Wilderness: Greenwashing Logging on Montana's Biggest National Forest**." Published by the World Prout Assembly
http://www.worldproutassembly.org/archives/2007/12/cheap_chips_cou.html

RESPONSE – Irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #27 - *"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."*

"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."

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.

http://www.fs.fed.us/emc/hfi/president.pdf

RESPONSE - Irrelevant to the decision to be made. The citation is a congressional report that summarizes a Congressional Research Service study of the effects of logging on wildfire risk. The Spring Gulch Timber Sale project purpose and need does not include a reduction in wildfire risk. The direct and indirect effects of the proposed action in the fuels section of the revised EA state that the suppression action success, should a fire event occur, would be increased through firefighter safety improvements due to the change in fuel model in the treated stands. It does not state that a risk of a wildfire event would be reduced. The fuel reduction goals associated with this project are limited to reducing the probability of extreme fire behavior within the stands to be treated.

COMMENT -

Fuels reduction Opposing View #28 - *"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."*

"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."

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.

http://www.nrdc.org/land/forests/tnl1201.asp

RESPONSE – This is from testimony from an associate of the Natural Resource Defense Council and is opinion. The statement is conjecture and not supported by science.

COMMENT -

Fuels reduction Opposing View #29 - *"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.*

Leitner, Brian. "Logging Companies are Responsible for the California Wildfires." the Democratic Underground, October 30, 2003.

http://www.democraticunderground.com/articles/03/10/30_logging.html

RESPONSE – Opinion.

COMMENT -

Fuels reduction Opposing View #30 - *"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."*

"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.

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."

"**More Large Forest Fires Linked To Climate Change**" ***Adapted from materials provided by the University of Arizona ,****ScienceDaily, July 10, 2006*

http://www.sciencedaily.com/releases/2006/07/060710084004.htm

RESPONSE – This paper discusses the role of general climate change in long-term increases in fire occurrence and severity. It is applicable, though so general in nature as to be of limited use in project level planning.

COMMENT -

Fuels reduction Opposing View #31 - *"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 (>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."*

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**", *Ecology*, 89, 3: 717-728.

http://www.firelab.org/index.php?option=com_jombib&task=showbib&id=343

RESPONSE - This paper discusses the role of general climate change in long-term increases in fire occurrence and severity, though so general in nature as to be of limited use in project level planning.

COMMENT -

Fuels reduction Opposing View #32 - *"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."*

"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."

Okoand Ilan Kayatsky, Dan. "**Fight Fire with Logging?**" *Mother Jones*, August 1, 2002
http://www.motherjones.com/news/feature/2002/08/fireplan.html

RESPONSE – Opinion and conjecture; not supported by current best science.

COMMENT -

Fuels reduction Opposing View #33 - *"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.' "*

Oregon State University Research, *Science Centric*, July 9, 2009

http://www.sciencecentric.com/news/article.php?q=09070918-forest-fire-prevention-efforts-will-lessen-carbon-sequestration-add-greenhouse-warming

RESPONSE – Potential issues related to climate change and carbon sequestration are included in the revised EA.

COMMENT -

Fuels reduction Opposing View #34 - *"While top officials blame recent fires on fuels, all the on-the-ground reports I've read focus on the weather."*

O'Toole Randal. "**Incentives, Not Fuels, Are the Problem**" Published by the Thoreau Institute
http://www.ti.org/fireshort.html

RESPONSE – Irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #35 - *"This paper will show that built-up fuels are not 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."*

O'Toole, Randal. 2002. "**Reforming the Fire Service: An Analysis of Federal Fire Budgets and Incentives**." The Thoreau Institute.
www.ti.org/firesvc.pdf

RESPONSE - Irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #36 - *"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."

O'Toole, Randal. "**Money to Burn?"** *Regulation*, Winter 2002 - 2003

http://www.cato.org/pubs/regulation/regv25n4/v25n4-6.pdf

RESPONSE - Irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #37 - *"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."*

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.

http://www.univision.co.za/offer-day-oA2A392Cr1N3B2x_2F2du3g3-music.shtml

RESPONSE - Irrelevant to the decision to be made. Not supported by best available science.

COMMENT -

Fuels reduction Opposing View #38 - *"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 Tyee 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 & Wildlife Service 1994). Such case studies provide little evidence that salvage logging of dead and dying trees will significantly reduce wildfires."*

Peters, R.L., E. Frost, and F. Pace. "**Managing for forest ecosystem health: A reassessment of the forest health crisis**." *Defenders of Wildlife*. April 1996.

http://www.magicalliance.org/Forests/Forest%20Health%20Evaluated.htm

RESPONSE - Irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #39 - *"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."*

Peterson, Mike, **testimony** to the Senate Agriculture, Nutrition, and Forestry Committee concerning the Healthy Forests Restoration Act, HR 1904.
June 26 2003
http://agriculture.senate.gov/Hearings/testimony.cfm?id=824&wit_id=2258

RESPONSE – Irrelevant to the decision to be made. The project is not designed to prevent loss of structures on private land because this project does not propose treatment on privately owned property. In addition to protecting life, property, and resources within and adjacent to the WUI the purpose and need of the project is to trend the project area landscape toward a more fire resilient condition (Revised EA p. 3-49). Following treatment on NFS lands within the WUI, future wildfires in the project area following a severe crown fire would be less intense, less resistance to control, and would provide more of a safety margin for firefighters and residents (Revised EA p. 3-48, 3-49).

COMMENT -

Fuels reduction Opposing View #40 - *"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."*

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

http://www.ingentaconnect.com/content/routledg/anna/2006/00000096/00000003/art00001

RESPONSE – Irrelevant to the decision to be made. While touching on valid observations on a more broad scale, the discussions in this paper are of little value in a site-specific evaluation such as the Spring Gulch Timber Sale proposal.

COMMENT -

Fuels reduction Opposing View #41 - *"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.*

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.

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."

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.

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 in 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."

Power, Thomas Ph.D. **"Thee Politics of Forest Fires -- The Abuse of Other People's Hard Times."** 8/15/2000, Thomas Michael Power is the Professor and Chairman of the Economics Department, University of Montana

http://www.forwolves.org/ralph/tompower.htm

RESPONSE – This is an opinion piece unrelated to any research. It is irrelevant to the decision to be made. This citation is conjecture and not supported by science.

COMMENT -

Fuels reduction Opposing View #42 - *"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 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).”

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

http://www.plantsocieties.org/PDFs/Fire%20letter%20CNPS%208.02%20letterhead.pdf

RESPONSE – This paper expresses the views of the California Native Plant Society on the relationship between the level of opposition to active management of forests and the increase in the frequency and intensity of present day forest fires. It is irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #43 - *“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)*

“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 stand replacing 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)

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**” *Bioscience*, July 2004 / Vol. 54 No. 7

http://www.montana.edu/phiguera/GEOG430/PurdyFireFieldTrip/Schoennagel_et_al_2004_Bioscience.pdf

RESPONSE – Applicable, though so general as to be of little use in site-specific planning and evaluation.

COMMENT -

Fuels reduction Opposing View #44 - *“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.”*

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

http://www.commondreams.org/scriptfiles/views03/1031-10.htm

RESPONSE – Opinion; conjecture and not supported by science.

COMMENT -

Fuels reduction Opposing View #45 - *"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.[5] 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.[6] This can lead to weaker, more densely-packed forests." (pgs. 19-20)*

"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)

Taxpayers for Common Sense. "***From the Ashes:*** **Reducing the Harmful Effects and Rising Costs of Western Wildfires**" Washington DC , Dec. 2000

http://www.ourforests.org/fact/ashes.pdf

RESPONSE – The Spring Gulch Timber Sale project is designed to reduce the probability of extreme fire behavior within the treated sites. The general statements in the article are of little value in designing or analyzing site specific management proposals.

COMMENT -

Fuels reduction Opposing View #46 - *"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."*

Thomas, Craig. "Living with risk: Homeowners face the responsibility and challenge of developing defenses against wildfires." ***Sacramento Bee*** **newspaper, July 1, 2007.**
http://www.sierraforestlegacy.org/NR_InTheNews/SFLIP_2007-07-01_SacramentoBee.php

RESPONSE - This is an opinion piece from a newspaper, and it is not relevant to the decision to be made.

COMMENT –

Fuels reduction Opposing View #47 - *"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)*

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. **http://ceres.ca.gov/snep/pubs/web/PDF/v1_ch04.pdf**

RESPONSE - This citation points to very general statements made in the Sierra Nevada framework, and identifies historic logging practices (high grading, clearcuts, and minimal slash amelioration). Current forest practices, specifically those proposed in the Spring Gulch Timber Sale, are designed specifically to address these issues. The comment is considered overly broad and not specific to the Spring Gulch project to be useful.

COMMENT -

Fuels reduction Opposing View #48 - *"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)*

USDA Forest Service, BALD ANGEL VEGETATION MANAGEMENT PROJECT ENVIRONMENTAL, ASSESSMENT. La Grande Ranger District, Wallowa-Whitman National Forest, December 2006

https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/6608/Wallowa_Whitman_Bald_Angel_Vegetation_Management_EA.pdf?sequence=1

RESPONSE – Applicable but not considered relevant to the decision to be made.

COMMENT –

Fuels reduction Opposing View #49 - *"Ironically, this very type of logging, experts inform us, is likely to increase, not decrease, the frequency and severity of wildland fires.*

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.' "

Voss, René, "**Getting Burned by Logging**," July 2002, *The Baltimore Chronicle*

http://www.baltimorechronicle.com/firelies_jul02.shtml

RESPONSE – Opinion and conjecture not supported by science.

COMMENT

Fuels reduction Opposing View #50 - *"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."*

"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."

Walsh, Jeremy "**Scientist: Money to fight beetles as fire mitigation not productive**" Durango Herald, April 23, 2010

http://durangoherald.com/sections/News/2010/04/23/Scientist_Money_to_fight_beetles_as_fire_mitigation_not_productive/

RESPONSE – Opinion**.** Irrelevant, as this project is not designed to eliminate forest fires or to stop bark beetles.

COMMENT -

Fuels reduction Opposing View #51 - *"New research published this week in the journal Science 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.' "*

Westerling, Anthony Ph.D., "Does Global Warming Increase Forest Fires?" NPR, *Talk of the Nation*, July 7, 2006

http://www.npr.org/templates/story/story.php?storyId=5541423

RESPONSE – This short article states that, "*New research published this week in the journal Science 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*." This is applicable but at such a large scale as to be of limited value in project specific planning such as the Spring Gulch Timber Sale. The analysis of vegetation effects in the revised EA (Chapter 3) includes discussion of the effects to carbon storage and effects of climate change predictions.

COMMENT -

Fuels reduction Opposing View #52 - *"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.*

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.

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."

Wuerthner, George, "**The Climate Factor - Forest thinning won't deter the coming large fires**" *Eugene Weekly*, December 6, 2007

http://www.eugeneweekly.com/2007/12/06/views3.html

RESPONSE – The Spring Gulch Timber Sale project includes objectives for reducing the probability of extreme fire behavior within the treated stands. The implication that only climate can influence fire behavior on a site specific basis, is not supported by science and constitutes conjecture. Given this, the citation is irrelevant to the decision to be made.

COMMENT -

Fuels reduction Opposing View #53 - *"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."*

Wuerthner, George. "**Logging, thinning would not curtail wildfires**" The Eugene *Register-Guard*, December 26, 2008

http://wuerthner.blogspot.com/2008/12/logging-thinning-would-not-curtail.html

RESPONSE – This is an opinion piece. Regardless, this project is not designed to prevent the spread of forest fires, but rather to reduce the probability of extreme fire behavior within the areas to be treated. This, indirectly, could slow the spread of fires within those treated areas and in some situations benefit firefighting efforts. This citation is considered as conjecture and not supported by science.

COMMENT -

Fuels reduction Opposing View #54 - *"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." "*

"The Forest Service makes these assertions even though the statement is full of falsehoods, misleading and/or unproven assumptions."

"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?"

"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."
"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."

Wuerthner, George **"Forest Service misses education opportunity"** Published in *NewWest*, June 2010

http://www.newwest.net/topic/article/elliston_face_is_yet_another_example_of_forest_service_malfeasance/C564/L564/

RESPONSE – Opinion and specific to a particular project. It is not relevant to the Spring Gulch Timber Sale project.

COMMENT -

Fuels reduction Opposing View #55 - *"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.*

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."

Wuerthner, George **"Pine Beetle Fears Misplaced"** *Helena Independent Record*, March 25, 2010

http://helenair.com/news/opinion/article_f3d671f0-37c9-11df-921d-001cc4c002e0.html

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RESPONSE – Opinion. This editorial is general in nature and its conclusions are not supported by science. It is irrelevant to the decision to be made.

COMMENT

Fuels reduction Opposing View #56 – *The following opposing view is so compelling, accurate and detailed it is shown in its entirety below.*

Why the National Fire Plan is a Trojan Horse for Logging - Burning Questions, *By George Wuerthner Ph.D., Published by CounterPunch, June 12-14, 2009*

http://www.counterpunch.org/wuerthner06122009.html

Text omitted here. It is included in the project record.

RESPONSE – This is an opinion paper, and irrelevant to the decision to be made.

Attachment from Mr. Artley on "Road Construction Harm".

COMMENT

Road Construction Opposing View #1 - *"Fragmentation has been considered as one of the most major factors that lead to the decline of many wildlife species (Brittingham and Temple 1983, Yahner 1988, Winslow et al. 2000) because fragmentation tends to decrease population productivity (Robinson et al. 1995). Therefore, Meffe states that "fragmentation has become a major subject of research and debate in conservation biology" (Meffe et al. 1997, p. 272). Forest fragmentation usually occurs when large and continuous forests are divided into smaller patches as a result of road establishment, clearing for agriculture, and human development (Robinson et al. 1995, Meffe et al. 1997)." (Pg. 1)*

"Generally, habitat fragmentation is an ecological process in which a large patch of habitat is divided into smaller patches of habitats. Usually, this process is caused by human activities (roads, agriculture, and logging). It also reduces the value of the landscape as habitat for many species (plants and animals). Fragmentation alters natural habitat in many ways, including reduction of patches' sizes, increment of distances between similar patches, and increment of edges and predation (Brittingham and Temple 1983, Robinson et al. 1995)." (Pp. 2 and 3)

*Al-jabber, Jabber M. 2003, "**Habitat Fragmentation: Effects and Implications**"*

http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf

RESPONSE - Samson 1997, states "Recent experimental evidence suggests habitat fragmentation in ecosystems with a high natural disturbance has little effect on species survival rates owing to the adaptation of natural disturbance regimes." Estill (1996) and Samson recommend not addressing the issue of fragmentation at the project level. Potential impacts to wildlife and plant species are presented in the wildlife and plants sections of the revised EA (Chapter 3, pp. 58-126 and 228-237).

COMMENT

Road Construction Opposing View #2 - *"Debris slides over a 20-year period were inventoried on 137,500 acres of forested land in the Klamath Mountains of southwest Oregon. Frequency during the study period was about one slide every 4.3 years on each 1,000 acres-an erosion rate of about 1/2 yd^3 per acre per year. Erosion rates on roads and landings were 100 times those on undisturbed areas, while erosion on harvested areas was seven times that of undisturbed areas. Three-quarters of the slides were found on slopes steeper than 70 percent and half were on the lower third of slopes." "Soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests."*
Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr and R. R. Ziemer Ph.D. ***Logging and forest roads related to increased debris slides in southwestern Oregon."*** *Journal of Forestry Vol. 83, No. 4. 1985.*
http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF

RESPONSE - This paper reviews landslide frequency as affected by forest management in the coastal mountains of Southwest Oregon. The authors found a six-fold increase in landslide volume in Forest Service-logged areas compared with unharvested areas, as well as erosion rates that were 100 times greater on roads and landings compared with undeveloped areas.
The study area geomorphology and climate are completely different from that of the Spring Gulch project area. Most important to note, however, is the fact that no landslides have been found within the project area. The revised EA acknowledges the effects of roads on erosion (sedimentation). These effects are disclosed in the revised EA in the Soil Resources, Water Resources, and Fish Populations and Habitat sections.

COMMENT –

Road Construction Opposing View #3 - *" 'Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained. The sediment contribution to streams from roads is often much greater than that from all other land management activities combined, including log skidding and yarding.' (Gibbons and Salo 1973). Research by Megahan and Kidd in 1972 found that roads built in areas with highly erosive soils can contribute up to 220 times as much sediment to streams as intact forests."*
*"****Applying Ecological Principles to Management of the U.S. National Forests****", Issues in Ecology Number 6 Spring 2000*
http://www.watertalk.org/wawa/ecosci.html
RESPONSE - Cited paper is a position paper that cites a number of studies to support its' position on active management on NFS lands. The Spring Gulch hydrology and aquatic analyses both acknowledge the impacts of the existing road condition and needed changes to those roads to reduce sediment delivery to adjacent streams (see Chapter 3 of the revised EA).

COMMENT
Road Construction Opposing View #4 - *"Plot-level studies have demonstrated the ability of forest roads to intercept and route both subsurface and surface overland flow more efficiently to the stream network. Significant amount of subsurface throughflow can be intercepted by the road, as a function of the road cut depth and the current saturation deficit, and then redirected, concentrating the flow in particular areas below the road. Road drainage concentration increases the effective length of the channel network and strongly influences the distribution of erosional processes. The concept of*

wetness index has been used in the study as a surrogate for subsurface throughflow, and the effect of forest roads on subsurface throghflow rerouting has been assessed by evaluating the changes in terms of draining upslope areas. A threshold model for shallow slope instability has been used to analyse erosional impacts of drainage modifications. In the model, the occurrence of shallow landsliding is evaluated in terms of drainage areas, ground slope and soil properties (i.e., hydraulic conductivity, bulk density, and friction angle). The model has been used to generate hypotheses about the broader geomorphic effect of roads. Modelling results have been compared with available field data collected in north-eastern Italy."
*Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi, "**Evaluating the Effects of Forest Roads on Shallow Landsliding**" Geophysical Research Abstracts, Vol. 5, 13312, 2003*

http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf

RESPONSE - Not relevant to this project, There is very little relevance of this reference to the proposed project. The landscape, climate, soils, and geology are so different that almost no correlation could be reached in regard to the proposed project. That being said, the premise of the study discusses the road network disrupting the surface and subsurface stream network. Road maintenance on project haul routes will help improve stream connectivity affected by the present road system. The analysis indicated there should be no sedimentation from existing roads. We expect there would be no measurable effects to aquatic resources from existing roads with the application of Best Management Practices.

COMMENT
Road Construction Opposing View #5 - *"A large scale land use experiment has taken place over the last 40 years in the mountainous areas of the northwestern U.S. through timber harvesting. This land use change effects the hydrology of an area through two mechanisms:*

- *Clear-cut logging which causes changes in the dynamics of Rain-On-Snow (ROS) events due to changes in the accumulation and ablation of snow caused by vegetation effects on snow interception and melt; and*

- *Construction and maintenance of forest roads which channel intercepted subsurface flow and infiltration excess runoff to the stream network more quickly."*

*Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins, "**Predicting the Effects of Forest Roads on Streamflow using a Distributed Hydrological Model**" from a poster presented at the fall meeting of the American Geophysica, Union, San Francisco, CA, December 1996.*

http://www.ce.washington.edu/~lxb/poster.html

RESPONSE - Relevant to this project. The poster on the internet does not provide much background information. The potential for road network to disrupt the surface and subsurface stream network was considered in the revised EA and design criteria, including Best Management Practices are in place to make sure that the project does not disrupt the stream network.

COMMENT
Road Construction Opposing View #6 and 7 - *"Many of the conclusions and assumptions contained in the Roads Report are based on analysis of the positive contributions of roads. Negative socio-*

economic effects of roads have been, in large part, glossed over. The general view expressed in the Roads Report is that overall, roads make a positive socio-economic contribution."
"The Socio-Economic Effects section has been constructed to overwhelmingly support the contention that the benefits of roads outweigh the costs. In order to arrive at such a conclusion, however, certain important economic costs and concepts have been omitted."
"A serious problem with the Roads Report is its lack of discussion concerning the economic costs arising from the negative ecological effects of roads. Despite overwhelming scientific data linking roads and sedimentation (Bennett 1991; Grayson et al. 1993; Lyon 1984; Megahan 1980; McCashion and Rice 1983; Wade 1998; Williams 1998), the socio-economic costs of mitigating the effects of this sedimentation receive no mention in the Roads Report. Such costs are central to and should be included in any socio-economic assessment of forest roads."
Road Construction Opposing View #7 - *"The present road system constitutes a legacy of current and potential sources of damage to aquatic and riparian habitats, mostly through sedimentation, and to terrestrial habitats through fragmentation and increased access" (Amaranthus et all 1985)."*
"The failure of the Report to properly address mitigation costs associated with the ecological effects is a serious problem that needs to be addressed in future drafts. Similarly, passive-use values need to be taken seriously and considered throughout the Roads Report. In order to rectify these problems, most of the Socio-Economic Effects subsections will have to be reworked. Failing to do so, the Roads Report will paint an incomplete picture of the costs and benefits associated with the Forest Service's road program."
Brister, Daniel. ***"A Review and Comment on: Forest Service Roads: A Synthesis of Scientific Information, 2nd Draft, USDA Forest Service."*** *December 1998.*
http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific-information-socio-economic-impacts

RESPONSE – The article cited is an opinion paper offering review and comment on "Forest Service Roads: A Synthesis of Scientific Information", 2nd Draft, USDA Forest Service, December 1998. The final document, "Forest Roads: A Synthesis of Scientific Information" (General Technical Report PWN-GTR-509) was published in May of 2001 by the Pacific Northwest Research Station, Portland, Oregon. The quotes displayed by Mr. Artley are taken from the paper written by Daniel Brister, University of Montana, Environmental Studies Program, in December of 1998 to assist the Forest Service in subsequent drafts. The final document was published in May of 2001. The article written by Mr. Brister suggests the Forest Service include, in the final document, an assessment of socio-economic impacts of forest system roads. The final document includes two sections on this topic 1) Direct Socioeconomic and 2) Indirect Socioeconomic Effects. The final document (as did previous drafts) published by the Forest Service in May of 2001 analyzes the effects of existing Forest System roads but does not analyze the effects of temporary roads. The Spring Gulch Timber Sale Project does not propose to construct additional Forest System roads. The impacts of road reconstruction are disclosed in the revised EA. The analysis of the socio-economic impacts of the existing Forest System road infrastructure is beyond the scope of this project.

COMMENT
Road Construction Opposing View #8 - *"Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized "mass movements," such as landslides. Forest practices can increase the rate at which both processes occur. Most sediment from forestry arises from landslides from roads and clearcuts on steep slopes, stream bank collapse after riparian harvesting, and soil erosion from logging roads and harvested areas. Roads, particularly those that are active for long periods of time, are likely the largest contributor of forestry-induced sediment (Furniss et al. 1991)."*
"Sediment can increase even when roads comprise just 3% of a basin (Cederholm et al. 1981)."

"More than half the species present in the study area will likely be negatively impacted by sedimentation from logging roads."
"In areas made highly turbid (cloudy) from sedimentation, the foraging ability of adults and juveniles may be inhibited through decreased algal production and subsequent declines in insect abundance, or, for visual-feeding taxa dependent on good light, through their inability to find and capture food. Highly silted water may damage gill tissue and cause mortality or physiological stress of adults and juveniles."
*Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004, "**Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial and aquatic vertebrates.**" Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service.*
http://warehouse.pfc.forestry.ca/pfc/25154.pdf

RESPONSE - Not relevant to this project. This article does not contain any data; it is a review of literature on the potential impacts of large-scale salvage logging that hadn't yet occurred. It estimates the effects from large-scale salvage logging without knowing where, at what scale and the timing it will occur. The Furniss citation is a chapter from an AFS publication. In it, he discusses roads and their impacts on watersheds and fisheries. Road location and design to lessen impacts to streams is described as well as promoting culvert design for fish passage. The Cederholm study in Washington State involves a higher precipitation zone, and steeper slopes. Estimated road cover for each 6HUC in the project area is 2.5 percent in -01 and 1.4 percent in -02, based on 60-foot clearing width (an overestimation considering all roads are existing and most cut and fill slopes are vegetated). This study refers to, and estimates effects from, large-scale salvage logging without knowing where, at what scale and timing it will occur. Increased turbidity assumes sediment delivery to streams from activity. Project design (unit location and road improvements) minimizes the risk of measurable increases in sediment delivery. The Spring Gulch Timber Sale Project does not propose to construct new roads. The discussion of road locations, road design, and erosion from roads are relevant to the project and is considered in the Water Resources and Fish Habitat sections of the revised EA and through the application of Forest Service Soil and Water Conservation measures (BMPs). No landslides were found in the project area**.**

COMMENT –

***Road Construction Opposing View #9 -** "The road construction and right-of-way logging were immediately detrimental to most aquatic invertebrates in South Fork Caspar Creek"*
"Salmonid populations decreased immediately after the road construction."
"Sustained logging and associated road construction over a period of many years do not afford either the stream or the 'fish population a chance to recover."
*Burns, James W., "**Some Effects of Logging and Associated Road Construction on Northern California Streams.**" Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972.*
http://www.fs.fed.us/psw/publications/4351/Burns72.pdf

RESPONSE - In the project referenced, 66 km of road were constructed, including four crossings, within 76 meters of the stream, plus the entire area between the road and stream was logged and they ran dozers over 41 percent of the stream length in the stream to remove slash and skid trees. Total biomass of invertebrates did not decrease. Only more susceptible orders declined. Recolonization occurred within 2 years and total biomass increased over control stream (N. Fk Caspar). Salmonid populations recovered to within 20 percent of preconstruction level within 2 years. Author stated that most damage was caused by dozers operating in the stream.

The relevance of this article to the Spring Gulch Timber Sale Project is something of a "lessons learned" tale about the importance of minimizing ground disturbance in and near streams. The Spring Gulch Project has riparian buffers between all harvest units and streams.

COMMENT

Road Construction Opposing View #11 - *"Forest roads apparently can serve as a partial filter to the movements of some amphibian species"*

*deMaynadier, Phillip G. and Malcolm L. Hunter, Jr. "**Road Effects on Amphibian Movements in a Forested Landscape**" From Natural Areas Journal (2000) Volume: 20, Issue: 1, Pages: 56-65*

http://www.mendeley.com/research/road-effects-on-amphibian-movements-in-a-forested-landscape/

RESPONSE – The revised EA analyzes potential impacts to the western toad, a species who's potential breeding areas include temporal ponds and road ditches. Due to design consideration regarding stream side buffers and others, there would be no sedimentation increases on any water bodies within the project area**.**

COMMENT
Road Construction Opposing View #12 - "Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road."
Dombeck, Mike Ph.D., US Forest Service Chief, 1997-2001, Remarks made to Forest Service employees and retirees at the University of Montana. February 1998.

https://www.uwsp.edu/cnr/gem/Dombeck/MDSpeeches/CD%20COPY/Chief%20Mike%20Dombeck%27s%20Remarks%20to%20Forest%20Service%20Employees%20and%20.htm

RESPONSE - Relevant to this project; in his speech, Chief Dombeck shares the core principles of his then forthcoming natural resource agenda, which addresses watershed health and restoration, sustainable forest ecosystem management, forest roads and recreation; and shares highlights of the President's proposed FY99 budget.

With respect to roads, Chief Dombeck states that forest roads are an essential part of the transportation system, providing benefits as well as potentially causing serious ecological impacts. Thus, he proposed a new long-term forest road policy with four primary objectives: 1) More carefully consider decisions to build new roads. 2) Eliminate old unneeded roads. 3) Upgrade and maintain the roads important to public access. 4) Develop new and dependable funding for forest road management.

The haul routes that would be used to haul timber from the Spring Gulch Timber Sale Project will receive needed maintenance work prior to any log hauling to reduce sediment delivery to adjacent streams. No new system roads are proposed.

COMMENT

Road Construction Opposing View #13 - *"Few marks on the land are more lasting than roads." "The negative effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented. Unwanted or non-native plant species can be transported on vehicles and clothing by users of roads, ultimately displacing native species. Roads may fragment and degrade habitat for wildlife species and eliminate travel corridors of other species. Poorly designed or maintained roads promote erosion and landslides, degrading riparian and wetland habitat through sedimentation and changes in streamflow and water temperature, with associated reductions in fish habitat and productivity. Also, roads allow people to travel into previously difficult or impossible to access areas, resulting in indirect impacts such as ground and habitat disturbance, increased pressure on wildlife species, increased litter, sanitation needs and vandalism, and increased frequency of human-caused fires."*
*EPA entry into the Federal Register: March 3, 2000 (Volume 65, Number 43) Page 11675, "**National Forest System Road Management.**"*
http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm

RESPONSE - Not relevant to this project; **e**xcerpt from a March 3, 2002 Federal Register Notice posted by the Forest Service. The Forest Service concluded that it needed to review its forest road system policy, one of four emphasis items in the agency's National Resource Agenda. The Agency proposed to revise 36 CFR Part 212 to shift the emphasis from transportation development to managing environmentally sound access. This Federal Register notice does not have any bearing on the Spring Gulch Project analysis. Road maintenance work is scheduled on roads that would be used to haul timber to reduce sediment delivery to streams (revised EA, pages 2-6, 2-7).

COMMENT

Road Construction Opposing View #14 - *"Fragmentation caused by roads is of special interest because the effects of roads extend tens to hundreds of yards from the roads themselves, altering habitats and water drainage patterns, disrupting wildlife movement, introducing exotic plant species, and increasing noise levels. The land development that follows roads out into rural areas usually leads to more roads, an expansion process that only ends at natural or legislated barriers."*

*"**Forest Fragmentation and Roads**" Eastern Forest Environmental Threat Assessment Center*

U.S. Forest Service - Southern Research Station

http://www.forestthreats.org/publications/su-srs-018/fragmentation

RESPONSE - This document discusses the effects of roads related to habitat fragmentation across the U.S. It is general in nature, and irrelevant. The paper provided neither site-specific nor species-specific information relative to Spring Gulch Timber Sale project nor the management of Kootenai National Forest management indicator species or designated threatened, endangered or sensitive species.

COMMENT

Road Construction Opposing View #15 - *"A huge road network with vehicles ramifies across the land, representing a surprising frontier of ecology. Species-rich roadsides are conduits for few species. Roadkills are a premier mortality source, yet except for local spots, rates rarely limit population size. Road avoidance, especially due to traffic noise, has a greater ecological impact. The still-more-important barrier effect subdivides populations, with demographic and probably genetic consequences. Road networks crossing landscapes cause local hydrologic and erosion effects, whereas stream networks and distant valleys receive major peak-flow and sediment impacts. Chemical effects mainly occur near roads. Road networks interrupt horizontal ecological flows, alter landscape spatial pattern, and therefore inhibit important interior species. Thus, road density and network structure are informative landscape ecology assays. Australia has huge road-reserve networks of native vegetation, whereas the Dutch have tunnels and overpasses perforating road barriers to enhance ecological flows. Based on road-effect zones, an estimated 15–20% of the United States is ecologically impacted by roads."*
*Forman, Richard T. and Lauren E. Alexander "**Roads and their Major Ecological Effects**" Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998*

http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.29.1.207?cookieSet=1&journalCode=ecolsys.1

RESPONSE - Relevant to this project; the quoted section above is an abstract from this citation. Many of the effects discussed in this paper are those associated with paved, well-maintained, high-speed roads. However, it is recognized that lower-standard, unpaved Forest roads have effects as well. The effects of displacement and avoidance were addressed in the Forest Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

A couple of other effects discussed in the paper include potential for road-kill and barrier effects. The potential for road-kill as a result of this project is very small, as no roads would be constructed. Hauling on other roads has little potential as well, due to the rough (and low speed) nature of the roads.

COMMENT
Road Construction Opposing View #16 - "Questions to consider: Roads dramatically alter forest ecosystems
1. Does the management prescription account for the ecological effects of the road construction and maintenance activities associated with carrying out such activities?
*2. Have alternatives to road building been considered? How does the plan attempt to address the effects of roads?" (page 37), 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."***
A National Wildlife Federation publication sponsored by the Bullitt Foundation
http://www.coastrange.org/documents/forestreport.pdf

RESPONSE – A Transportation Analysis Process (TAP) Report for the Spring Gulch Timber Sale project accessed the risks and problems posed by existing roads within the sub-watershed by resource area including safety, watershed and aquatic, terrestrial wildlife, noxious weeds, financial, roads and inventory roadless area risks. The TAP is included in the project file.

COMMENT

Road Construction Opposing View #17 - *"The authors warned that cutting roads into current roadless areas could bring much more harm to wildlife, soil and fisheries than the beetle-killed trees pose to the forest."*
*Frey, David "**Logging Won't Halt Beetles, Fire, Report Says**", NewWest.net, 3-03-10*

http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/

RESPONSE – The Spring Gulch Timber Sale project does not propose any new road construction, including road construction in inventoried roadless areas.

COMMENT

Road Construction Opposing View #18 - *"Rarely can roads be designed and built that have no negative impacts on streams. Roads modify natural drainage patterns and can increase hillslope erosion and downstream sedimentation. Sediments from road failures at stream crossings are deposited directly into stream habitats and can have both on-site and off-site effects. These include alterations of the channel pattern or morphology, increased bank erosion and changes in channel width, substrate composition, and stability of slopes adjacent to the channels."*
"All of these changes result in important biological consequences that can affect the entire stream ecosystem. One specific example involves anadromous salmonids, such as salmon and steelhead, that have complex life histories and require suitable stream habitat to support both juvenile and adult life stages."
"A healthy fishery requires access to suitable habitat that provides food, shelter, spawning gravel, suitable water quality, and access for upstream and downstream migration. Road-stream crossing failures have direct impacts on all of these components."
*Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan, **"Diversion Potential at Road-Stream Crossings."** USDA Forest Service. 9777 1814—SDTDC. December 1997.*
http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf

RESPONSE – Relevant to this project; this article discusses the potential effects of water being diverted out of road/stream crossings. It is from the water/road interaction technology series produced by San Dimas Technology and Development Center. The message it contains is that road/stream crossings need to be designed in a manner that if the culvert becomes plugged that the low point in the road is at the site of the culvert so as to minimize the potential for water to divert down the road, increasing the amount of erosion and sediment delivery to the receiving water. The Spring Gulch Timber Sale Project does not propose any new road construction that involves stream crossings.

COMMENT

Road Construction Opposing View #19 - *"Barry Noon, a professor of wildlife ecology at Colorado State University, noted that scientific research has consistently shown the adverse effects of roads on hydrologic processes and fish and wildlife populations.*

" "One of the key things to recognize is the effects of the roads extend far beyond their immediate footprint," Noon said. For example, "in terms of hydrology, the roads are leading to faster runoff of water, often with great increases in sedimentation, particularly following storm events, and roads in watersheds often lead to increases in the intensity of floods." "

These changes degrade fish habitat because of the increased sedimentation that leads to decreases in water quality, Noon said. And roads fragment wildlife habitat and create areas that animals avoid, often as result of increased hunting, he said."

Gable, Eryn "Battling beetles may not reduce fore risks – report", Land Letter, March 4, 2010

http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/

RESPONSE – A Transportation Analysis Process (TAP) Report for the Spring Gulch Timber Sale project accessed the risks and problems posed by existing roads within the sub-watershed by resource area including safety, watershed and aquatic, terrestrial wildlife, noxious weeds, financial, roads and inventory roadless area risks. The TAP is included in the project file.

COMMENT

Road Construction Opposing View #20 - *"Roads and skid trails have been identified as a major contributor to increased turbidity of water draining logging areas resulting in increases from 4 to 93 parts per million (Hoover, 1952). Forest roads have been found to have erosion rates from one to three orders of magnitude greater than similar undisturbed areas (Megahan, 1974) and perhaps account for as much as 90 percent of all forest erosion (Megahan, 1972). Forest roads can also cause soil erosion and stream sedimentation, which adversely impact on the nation's water quality (Authur et al., 1998).*
*Grace, Johnny M. III Ph.D. 2003. "**Minimizing the impacts of the forest road system.**" In: Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. [Place of publication unknown]: International Erosion Control Association: 301-310.*
http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf

RESPONSE – Relevant to this project; the article studied the efficacy of different types of sediment control systems to minimize sediment travel distances through buffers. It contains pertinent information about what type of sediment traps/filters work and is relevant to the road work identified in the project area. Road maintenance on forest roads is designed to minimize erosion. This authors' study points out the efficacy of vegetated buffers along with filter fencing and sediment catchment basins ability to reduce sediment movement from roads.

COMMENT

Road Construction Opposing View #21 - *"Roads have well-documented, short- and long-term effects on the environment that have become highly controversial, because of the value society now places on unroaded wildlands and because of wilderness conflicts with resource extraction." "(Road) consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping, illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity." Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D., and Martha H. Brookes, Editors. 2001. "**Forest Roads: A Synthesis of Scientific Information.**" USDA Forest Service, General Technical Report PNW-GTR-509.*
http://www.fs.fed.us/pnw/pubs/gtr509.pdf

RESPONSE – PNW-GTR-509 describes the effects roads have on ecosystems. It is a companion paper to "Roads Analysis: Informing Decisions About Managing the National Forest Transportation System" (USDA FS 1999). The report details the known issues related to road impacts on physical and biological resources, road impacts at various scales, and the socio-economics of roads. The report then describes the known science surrounding these issues. The focus of the report is to help the reader understand how roads function in the landscape.

The Spring Gulch Timber Sale project recognizes the impacts that roads have on the landscape. No new roads would be constructed with this project. Road maintenance would be conducted, with application of BMPs. All roads would be managed and maintained in accordance with Forest Service Soil and Water Conservation Practices (BMPs).

COMMENT –

Road Construction Opposing View #22 - *"Fires in the roaded areas are more intense, due to drier conditions, wind zones on the foothill/valley interface, high surface-fuel loading, and dense stands." Hann, W.J. et al. 1997, Landscape dynamics of the Basin. Pp. 337-1,055, in: Quigley, T.M. and S.J. Arbelbide (eds.) An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service, PNW-GTR-405*
http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf

RESPONSE – Not relevant to this project; publication speaks of fire-line intensity with relation to clear-cutting live mature over story. The Spring Gulch Timber Sale project does not include any clearcuts.

COMMENT

Road Construction Opposing View #23 - *"Many forested landscapes are fragmented by roads, but our understanding of the effects of these roads on the function and diversity of the surrounding forest is in its infancy. I investigated the effect of roads in otherwise continuous forests on the macroinvertebrate fauna of the soil. I took soil samples along transects leading away from the edges of unpaved roads in the Cherokee National Forest in the Southern Appalachian mountains of the*

United States. Roads significantly depressed both the abundance and the richness of the macroinvertebrate soil fauna. Roads also significantly reduced the depth of the leaf-litter layer. These effects persisted up to 100 m into the forest. Wider roads and roads with more open canopies tended to produce steeper declines in abundance, richness, and leaf-litter depth, but these effects were significant only for canopy cover and litter depth. The macroinvertebrate fauna of the leaf litter plays a pivotal role in the ability of the soil to process energy and nutrients. These macroinvertebrates also provide prey for vertebrate species such as salamanders and ground-foraging birds. The effect of roads on the surrounding forest is compounded by the sprawling nature of the road system in this and many other forests. My data suggest that even relatively narrow roads through forests can produce marked edge effects that may have negative consequences for the function and diversity of the forest ecosystem."

*Haskell, David G. Ph.D. 1999 "**Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains**"*
http://www.jstor.org/stable/2641904

RESPONSE – Not relevant to this project; the text above is directly copied from the abstract of the paper. This study took place in Tennessee, in the Southern Appalachian Mountains with hardwood tree species; a completely different ecosystem than that of the project area. In summary, the author found that roads significantly depressed the abundance and diversity of macroinvertebrates, due to a reduction in leaf litter, or habitat.
Though we do not inventory macroinvertebrates as a matter of course in field surveys, complying with the Northern Region Soil Quality Standards would limit litter layer disturbance within the proposed harvest units. No roads would be constructed as a part of the project.

COMMENT

Road Construction Opposing View #24 - *"Roads remove habitat, alter adjacent areas, and interrupt and redirect ecological flows. They subdivide wildlife populations, foster invasive species spread, change the hydrologic network, and increase human use of adjacent areas. At broad scales, these impacts cumulate and define landscape patterns."*

Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D., "Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937–1999" *Ecological Applications: Vol. 16, No. 3, pp. 1222-1237.*

http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap

RESPONSE – This reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context roads as sources of habitat fragmentation, spread of invasive species and increased human use or presence. Please refer to Wildlife Resources section, in Chapter 3 of the revised EA for more detail concerning effects to wildlife and wildlife habitat. Change in drainage network due to roads has been analyzed and the discussion is included in the Water Resources section of the revised EA.

COMMENT –

Road Construction Opposing View #25 - *"Last winter was unusually wet in the Pacific Northwest. The result was landslides all over caused by logging roads; five people died, spawning streams were ruined, water supplies were contaminated and the flooding was tremendously aggravated. According to David Bayles, conservation director of the Pacific Rivers Council, aerial surveys documented more than 650 landslides in February in Washington and Oregon alone. The stupidest and most dangerous practice is allowing logging roads on steep slopes — that's really asking for it.*
You may ask yourself why the taxpayers are expected to pony up to build roads for profitable logging companies. Build roads for the timber companies in order to stimulate the U.S. logging, paper and building industries. There's just one problem. A lot of U.S. logs get shipped overseas, mostly to Japan. We're actually subsidizing Japanese companies while doing terrible damage to our environment and not helping the U.S. job scene much except when it comes to cutting

Start with the assumption that the U.S. Forest Service a component of the Department of Agriculture, is simply an auxiliary branch of the timber industry and you'll pretty much have the picture of what's going on. Last winter, the Forest Service refused a bid at a timber auction from an environmentalist who wanted to save, not harvest, a stand of evergreens in the Okanogan National Forest in Washington. Instead, the Forest Service accepted a bid of $15,000 from a logging company that cut 3.5 million board-feet of lumber in that stand. Try to find a price like that at Home Depot."

Ivins, Molly,Creators Syndicate, August 3 1997 08 03

http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html

RESPONSE – This is an opinion piece and is conjecture. Effects of proposed activities, including road related activities, on slope stability was addressed in detail in the hydrology and soils disclosures in Chapter 3 of the EA. Water quality and the effects of roads on sedimentation were analyzed and the discussion is included in the Water Resources section (Chapter 3, pp. 127-151).

As to exporting logs oversees, 36 CFR 223.188 specifically prohibits the exporting of unprocessed Federal timber:

36 CFR 223.188: Prohibitions against exporting unprocessed Federal timber.

> *No person who acquires unprocessed timber originating from Federal lands west of the 100th meridian in the contiguous 48 States may export such timber from the United States, or sell, trade, exchange, or otherwise convey such timber to any other person for the purpose of exporting such timber from the United States. This prohibition does not apply to specific quantities of grades and species of such unprocessed Federal timber that the Secretary of Agriculture determines to be surplus to domestic manufacturing needs.*

COMMENT

Road Construction Opposing View #26 - *"Although disturbance patches are created by peak flow and debris flow disturbances in mountain landscapes without roads, roads can alter the landscape*

distributions of the starting and stopping points of debris flows, and they can alter the balance between the intensity of flood peaks and the stream network's resistance to change."
Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D., Beverley C. Wemple Ph.D., and Kai U. Snyder. ***"Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks."*** *Conservation Biology 14, No. 1. 2000.*
http://www.jstor.org/stable/2641906

RESPONSE – Relevant to this project; the content discussed in this reference material, which discusses the effects roads have on stream networks, was the premise for the maintenance projects that will be completed on the haul routes prior to project implementation. Assurance of proper BMP use during road maintenance activity (Chapter 2, pp. 2-6) would decrease the effects roads in the project area have on the stream network.

COMMENT –

Road Construction Opposing View #27 - *"In the Pacific Northwest, the two main processes that contribute to sediment production are mass failure and surface erosion from forest roads (Fredriksen 1970, Reid and Dunne 1984). In the Clearwater River basin in the State of Washington, as much as 40 percent of the sediment produced in the watershed was attributed to logging roads (Reid 1980)."*
Kahklen, Keith. ***"A Method for Measuring Sediment Production from Forest Roads."*** *Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001.*
http://www.fs.fed.us/pnw/pubs/rn529.pdf

RESPONSE – Relevant to this project; this peer-review literature is an excellent source of data for analyzing effects of roads in the Pacific Northwest where terrain and climate are considerably different that of the project area.

The Spring Gulch Timber Sale revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce sediment in the project area prior to project implementation (see page 2-6, 2-7, 3-145 to 3-147 and Appendix B in the EA).

No landslides were found in the Spring Gulch Timber Sale project area. See pages 3-179 to 3-184 of the revised EA for more detailed information.

COMMENT

Road Construction Opposing View #28 - *"It is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts, the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine-fuels reductions in unburned forests."*
Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J., Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D., ***Excerpt from a letter to the Subcommittee on Forests & Forest Health U.S. House of Representatives****. 3 July, 2002.*
http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm

RESPONSE – Not relevant to this project; the excerpt is from a letter to congress. It refers to a body of literature that documents the adverse impacts of roads on a variety of resources. The letter is a refutation of Forest Service policy on post fire salvage logging and road building. The Spring Gulch Timber Sale project EA recognizes the negative effects of roads in the project area. Road maintenance will be done on haul routes to reduce the impacts of roads used for the project on streams (Chapter 2, pp. 6-10).

COMMENT

Road Construction Opposing View #29 - *"Forest fragmentation, as scientists call the intentional felling of woodland, is actually two processes. In populated areas such as the Atlantic seaboard, it means reduction in the size of forest tracts, usually due to suburbanization and development. In less inhabited areas--northern New England, for example--forest fragmentation refers to isolation of one patch of forest from another by logging, or by the building of roads or power lines."*

Lawren, Bill 1992 "Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species", National Wildlife

http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx

RESPONSE – It is unclear as what the specific point concerning fragmentation is relative to the Spring Gulch Timber Sale project. Refer to responses to the revised EA, Chapter 3, pp. 122-127 for migratory bird disclosures.

COMMENT –

Road Construction Opposing View #30 - *"The compaction of forest road soils is known to reduce aeration, porosity, infiltration rates, water movement, and biological activity in soils. Research indicates that soil bulk density, organic matter, moisture, and litter depths are much lower on roads than on nearby forest lands. Macropores, which provide soil drainage and infiltration, have been shown to significantly decrease in size as a result of road construction and use. Reduced infiltration and increased compaction promote soil erosion, especially during the seasonal southwestern monsoon rains (Elseroad 2001)."*
"Physical disturbances caused by road construction and vehicle use create ideal conditions for colonization by invasive exotic plant species. The use of roads by vehicles, machinery, or humans often aids the spread of exotic plant seeds. Once established, they can have long-term impacts on surrounding ecosystems and can be difficult to remove."
"Roads are known to cause habitat fragmentation. Many create ecological 'edges' with different plant species, light levels, and hiding cover, all of which may alter animal survival, reproductive success, and movement patterns. The introduction of exotic plants can disrupt the availability of native vegetation used by wildlife for food and shelter (Trombulak and Frissell 1999)."
"Because they provide easier access to many forest tracts, forest roads often allow more human-caused fires to be ignited."
*Lowe, Kimberly Ph.D.,"**Restoring Forest Roads.**" A Northern Arizona University Ecological Restoration Institute publication, Working Paper 12. June, 2005.*
http://www.eri.nau.edu/en/information-for-practitioners/restoring-forest-roads

RESPONSE – This reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context roads as sources of habitat fragmentation, spread of invasive species and increased human use or presence.

Please refer to the Wildlife Resources section of Chapter 3 for more specifics concerning how effects to wildlife and wildlife habitat were addressed in the revised EA.

COMMENT –

Road Construction Opposing View #31 - *"Almost everywhere people live and work they build and use unimproved roads, and wherever the roads go, a range of environmental issues follows."*
"Among the environmental effects of unimproved roads, those on water quality and aquatic ecology are some of the most critical. Increased chronic sedimentation, in particular, can dramatically change the food web in affected streams and lakes."
"The nearly impervious nature of road surfaces (or treads) makes them unique within forested environments and causes runoff generation even in mild rainfall events, leading to chronic fine sediment contributions."
"If we look at the issue of what we need to learn or the research priorities for forest road hydrology, I would argue that the areas of cutslope hydrology and effectiveness of restoration efforts are perhaps most critical."
"At a few sites in the mountains of Idaho and Oregon a substantial portion of the road runoff (80–95%) came from subsurface flow intercepted by the cutslope (Burroughs et al., 1972; Megahan, 1972; Wemple, 1998)."
Luce, Charles H. Ph.D., 2002. ***"Hydrological processes and pathways affected by forest roads: what do we still need to learn?"*** *Hydrologic Processes: 16, 2901–2904.*
http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf

RESPONSE – Relevant to this project; sediment, water yield, and stream connectivity has been discussed in other response to comments and extensively in the Water Resources section of the revised EA. Road maintenance conducted prior to log hauling will help improve the existing road system and road obliteration of temporary roads will effectively account for any lasting effects of the proposed action.

COMMENT –

Road Construction Opposing View #32 - *"Roads in the watershed contribute to sediment production by concentrating runoff, thereby increasing sediment load to the stream network. Most unimproved (dirt) roads connect either directly or indirectly with streams and, therefore, act as extensions of stream networks by effectively increasing watershed drainage density and subsequently sediment loads to streams. In the South Fork subwatershed of Squaw Creek, road connectivity has resulted in an increase in effective drainage density of approximately 250%. Throughout the Squaw Creek watershed, it is estimated that dirt roads potentially contribute as much as 7,793 metric tons/year to the watershed sediment budget."*
Maholland, Becky and Thomas F. Bullard Ph.D., ***"Sediment-Related Road Effects on Stream Channel Networks in an Eastern Sierra Nevada Watershed."*** *Journal of the Nevada Water Resources Association, Volume 2, Number 2, Fall 2005.*

http://www.nvwra.org/docs/journal/vol_2_no_2/NWRAjournal_fall2005_article4.pdf

RESPONSE – Relevant to this project; this is another study that looks at the roads impact on the stream network. It also looks at the potential sedimentation associated with road segments.

The analysis indicates road maintenance completed prior to timber hauling would substantially reduce the effects roads in the project area are currently having on sediment delivery as described in the revised EA. The revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce erosion from the road surfaces in the project area prior to project implementation (see Chapter 2, pp. 6-10).

COMMENT –

Road Construction Opposing View #33 - *"One of the greatest impacts of roads and (especially motorized) trails is their effect on the hydrology of natural landscapes, including the flow of surface and ground water and nutrients. These hydrologic effects are responsible for changes to geomorphic processes and sediment loads in roaded areas (Luce and Wemple 2001)." (pg. 12)*
*Malecki, Ron W. "**A New Way to Look at Forest Roads: the Road Hydrologic Impact Rating System (RHIR)**" The Road-RIPorter, Autumn Equinox, 2006*
http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf

RESPONSE – generic discussion and opinion. For site specific analysis disclosures see Soil Resources and Water Resources sections of the revised EA.

COMMENT –

Road Construction Opposing View #34 - *"A study was made on 344 miles of logging roads in northwestern California to assess sources of erosion and the extent to which road-related erosion is avoidable. At most, about 24 percent of the erosion measured on the logging roads could have been prevented by conventional engineering methods. The remaining 76 percent was caused by site conditions and choice of alignment. On 30,300 acres of commercial timberland, an estimated 40 percent of the total erosion associated with management of the area was found to have been derived from the road system."*
*McCashion, J. D. and R. M. Rice Ph.D. 1983. "**Erosion on logging roads in northwestern California: How much is avoidable?**" Journal of Forestry 8(1): 23-26.*
http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf

RESPONSE – Relevant to this project; this reference talks about how not all sediment sources from roads can be avoidable. Road maintenance prior to project implementation will install new culverts and recondition existing culverts that will decrease the effects the existing roads have on the stream network. The revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures prior to project implementation to reduce sediment in the project area (see revised EA, Chapter 2, pp. 6-10 and Appendix B).

COMMENT -

Road Construction Opposing View #35 - *"Research has shown that roads can have adverse impacts on the water quality on the forest landscape (Authur et al. 1998; Binkley and Brown 1993; Megahan et al. 1991). The forest road system has been identified by previous research as the major source of soil erosion on forestlands (Anderson et. al 1976; Patric 1976; Swift 1984; Van Lear et al. 1997). Furthermore, roads are cited as the dominant source of sediment that reaches stream channels (Packer 1967; Trimble and Sartz 1957; Haupt 1959)."*
*McFero III, Grace, J. "**Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?"** An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004.*
http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf

RESPONSE – Relevant to this project; the referenced material discusses the effects of filter strips and their use to control sedimentation. The study was completed in Alabama and Georgia, which have substantially different soils, climate, and forest conditions. They also have different road building practices that are unique from how we build and maintain roads in Montana.

COMMENT

Road Construction Opposing View #36 - *"Overall, roads had a greater impact on landscape structure than logging in our study area. Indeed, the 3-fold increase in road density between 1950–1993 accounted for most of the changes in landscape configuration associated with mean patch size, edge density, and core area."*

McGarigal, Kevin Ph.D., William H. Romme Ph.D., Michele Crist Ph.D.and Ed Roworth Ph.D.
"Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)" Landscape Ecology, Volume 16, Number 4 / May, 2001

http://www.springerlink.com/content/w12557624742tv77/

RESPONSE – Relevant to this project; this reference talks about how not all sediment sources from roads can be avoidable. Road maintenance prior to project implementation will install new culverts and recondition existing culverts that will decrease the effects the existing roads have on the stream network. The revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures prior to project implementation to reduce sediment in the project area (see revised EA, Chapter 2, pp. 6-10 and Appendix B).

COMMENT -

Road Construction Opposing View #37 - *"Road construction in remote areas appears to be the major long term impact of resource extraction industries and the most significant problem facing grizzly bears in most locations. Open roads are an influence in all 5 ways that people affect bears. Vehicles on roads can harass bears, displace them from quality habitats, and cause reduced bear use of altered habitats, such as cutting units. Bears that are displaced from roads may cause social disruption in areas away from roads. Finally, roads permit access for many people and some of these will shoot bears." (Pg. 62)*

*McLellan, Bruce N. "**Relationships between Human Industrial Activity and Grizzly Bears**" Bears: Their Biology and Management, Vol. 8 International Conference on Bear Research and Management February 1989 (1990), pp. 57-64*

http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf

RESPONSE – The revised EA includes a complete analysis of potential impacts to grizzly bears (revised EA, Chapter 3, Wildlife Resources , pages 103-116). This analysis determined the proposed actions "may effect, but not adversely affect the grizzly bear. This determination is based on (1) standards for core, TMRD, OMRD, HE, ORD are met, (2) sufficient displacement habitat is available, (3) no project activities would occur during the spring bear season (April 1 – June 15), and (4) no aerial activities would occur.

COMMENT -

***Road Construction Opposing View #38 -** "Erosion from forest roads can be a large source of sediment in watersheds managed for timber production."*

*Megahan, Walter F. Ph.D. "**Predicting Road Surface Erosion from Forest Roads in Washington State**" from a presentation presented at the 2003 Geological Society of America meeting.*

http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm

RESPONSE – Not relevant to this project; this reference material is discussing a model used to estimate sediment input associated with roads. Because the model was developed for roads in the Pacific Northwest it is not a good tool for this project.

The revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures prior to project implementation to reduce sediment in the project area (see EA).

COMMENT -

***Road Construction Opposing View #39 -** "Today, addressing the adverse impacts of forest roads is consistently identified as one of the highest watershed restoration priorities in U.S. forests—in many forested watersheds in the western United States there is a greater road density than stream density. It is simply irrational to spend millions of dollars subsidizing further forest road construction when we are simultaneously spending millions of dollars to offset detrimental effects associated with similar actions in the past."*

Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli, about S. 977 and HR 1376), the Act to Save America's Forests, April 28, 1998, U.S. Capitol

http://www.saveamericasforests.org/news/ScientistsStatement.htm

RESPONSE – Relevant to this project; this is another study that looks at the roads impact on the stream network. It also looks at the potential sedimentation associated with road segments.

The analysis indicates road maintenance completed prior to timber hauling would substantially reduce the effects roads in the project area are currently having on sediment delivery as described in the EA. The revised EA acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce erosion from the road surfaces in the project area prior to project implementation (see Chapter 2, pp. 6-10).

COMMENT -

Road Construction Opposing View #40 - *"Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity - habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting - are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals."*
"Most public agencies disregard the ecological impacts of roads, and attempt to justify timber roads as benefiting recreation and wildlife management. Even when a land manager recognizes the desirability of closing roads, he or she usually contends that such closures would be unacceptable to the public."
"The Forest Service and other public agencies will claim that road closures, revegetation, and other restorative measures are too expensive to be implemented on a broad scale. But much of the approximately $400 million of taxpayers' money squandered annually by the Forest Service on below-cost timber sales goes to road-building. Road maintenance is also expensive. Virtually all of this money could be channeled into road closures and associated habitat restoration. This work would be labor-intensive, and providing income to the many laid off loggers, timber sale planners, and road engineers -- for noble jobs, rather than jobs of destruction!"
*Noss, Reed F., Ph.D. 1995. "**The Ecological Effects of Roads or the Road to Destruction**"*
Wildlands CPR
http://www.wildlandscpr.org/ecological-effects-roads

RESPONSE – Relevant to this project; many of the effects discussed in this paper are those associated with paved, well-maintained, high-speed roads. However, it is recognized that lower-standard, unpaved Forest roads have effects as well. The effects of displacement and avoidance were addressed in the Forest Plan and it provides wildlife secure habitat through management of open motorized road and trail densities. This direction is found in the revised EA.

COMMENT -

Road Construction Opposing View #42 - *"Increasingly, previously extensive, continuous tracts of forest are being reduced to widely dispersed patches of remnant forest vegetation by logging and road-building, but few measures of the effects of roads on forest fragmentation are available.*

Fragmentation affects animal populations in a variety of ways, including decreased species diversity and lower densities of some animal species in the resulting smaller patches. This study seeks to quantify the effects of roads and logging activities on forest habitat."

"Roads precipitate fragmentation by dissecting previously large patches into smaller ones, and in so doing they create edge habitat in patches along both sides of the road, potentially at the expense of interior habitat. As the density of roads in landscapes increases, these effects increase as well. McGurk and Fong (1995) considered the additive effects of clearcuts and roads, but did not measure the amount of associated edge habitat. Thus a more direct measurement of the impacts of roads on landscapes is needed."

*Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. "**Contribution of Roads to Forest Fragmentation in the Rocky Mountains**." Conservation Biology 10: 1098-1106.*

http://cpluhna.nau.edu/Research/contribution_of_roads_to_forest_.htm

RESPONSE – This project does not include any new road construction.

COMMENT

Road Construction Opposing View #43 - *"Erosion on roads is an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest. Runoff rates and sediment concentrations from 10 road segments subject to a variety of traffic levels were monitored to produce sediment rating curves and unit hydrographs for different use levels and types of surfaces. These relationships are combined with a continuous rainfall record to calculate mean annual sediment yields from road segments of each use level. A heavily used road segment in the field area contributes 130 times as much sediment as an abandoned road. A paved road segment, along which cut slopes and ditches are the only sources of sediment, yields less than 1% as much sediment as a heavily used road with a gravel surface."*

*Reid, L. M. Ph.D. and T. Dunne (1984), "**Sediment Production from Forest, Road Surfaces**," Water Resour. Res., 20(11), 1753–1761.,*

http://www.agu.org/pubs/crossref/1984/WR020i011p01753.shtml

RESPONSE – This study found that traffic level on gravel surfaced roads was the primary factor determining the amount of sediment produced from the road surface. Rainfall mobilized fines brought to the surface, delivering the fines to cross drain culverts. Study conducted in western Washington where annual precipitation during study averages greater than 150 inches.

The revised EA assesses sediment delivery potential from roads used for log hauling (see Water Resources and Soil Resources sections in chapter 3 of the revised EA).

COMMENT -

Road Construction Opposing View #44 - *"Roads are associated with high sediment inputs and altered hydrology, both of which can strongly influence downstream channel habitats. Roads are also important as a source of indirect human impacts and as an agent of vegetation change and wildlife disturbance."*
"Any ground disturbance increases the potential for erosion and hydrologic change, and roads are a major source of ground disturbance in wildlands. Compacted road surfaces generate overland flow, and much of this flow often enters the channel system, locally increasing peak flows. Localized peak flows are also increased where roads divert flow from one swale into another, and where roadcuts intercept subsurface flows."
"Overland flow from the road surface is a very effective transport medium for the abundant fine sediments that usually are generated on road surfaces. Road drainage also can excavate gullies and cause landslides downslope in swales. Cut and fill slopes are often susceptible to landsliding, and road-related landsliding is the most visible forestry-related erosional impact in many areas."
Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss, 1994. ***"What do we know about Roads?"*** *USDA Forest Service.*
http://www.fs.fed.us/psw/publications/reid/4Roads.htm

RESPONSE – Relevant to this project; this popular reference, which discusses the impacts roads can have on a variety of different resources and components of the stream ecosystems, is a good summary of what we know today. The findings and disclosures found in this reference have helped shape the proposed action with regard to the maintenance portion of the proposed action including the installation of new culverts and reconditioning of existing culverts which decreases the effects roads in the project area have on the stream network. No landslides were found in the project area.

COMMENT

Road Construction Opposing View #45 - *"Disturbances from roadbuilding and logging changed the sediment/discharge relationship of the South Fork from one which was supply dependent to one which was stream power dependent, resulting in substantial increases in suspended sediment discharges."*
"Road construction and logging appear to have resulted in increases in average turbidity levels (as inferred from suspended sediment increases) above those permitted by Regional Water Quality Regulations."
Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. 1979. ***"Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976."*** *USDA Forest Service, Research Paper PSW-146.*
http://www.fs.fed.us/psw/publications/rice/Rice79.pdf

RESPONSE – Not relevant to this project; this reference from the 1970s looked at a paired watershed comparison associated with logging activities that removed 65 percent of the stand volume in the Casper Creek Watershed in California. This reference does not represent the best science available and does not reflect forest practices used today especially as they relate to the proposed activity.

COMMENT -

Road Construction Opposing View #46 - *"Sediment eroded from gravel roads can be a major component of the sediment budget in streams in this region (Van Lear, et al, 1995)."*
*Riedel, Mark S. Ph.D. and James M. Vose Ph.D., "**Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians."** Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 – August 1, 2002.*
http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf

RESPONSE – Not relevant to this project; this reference from Georgia and Tennessee discusses different sediment sources associated with a watershed restoration planning. Although the landscape for this project in Montana is different than that of the southeastern U.S., the process used to develop this project is similar. The installation of new culverts and reconditioning of existing culverts will decrease the effects roads in the project area have on the stream network and sediment contributions.

COMMENT –

Road Construction Opposing View #47 - *"Early studies of elk were among the first to address effects of roads on wildlife, establishing a precedent for subsequent research on a wide range of terrestrial and aquatic species. These early elk-roads studies included those reported in a symposium on the topic in 1975 (Hieb 1976), the seminal studies of Jack Lyon in Montana and northern Idaho (Lyon 1979, 1983, 1984), the Montana Cooperative Elk-Logging Study (Lyon et al. 1985), and work by Perry and Overly (1977) in Washington and Rost and Bailey (1979) in Colorado.*
As research and analysis techniques have become more sophisticated, particularly with the advent of geographic information systems (GIS) and high-resolution remote imagery, the study of effects of roads on terrestrial and aquatic communities has evolved into a unique discipline of "road ecology" (Forman et al. 2003). Road effects are far more pervasive than originally believed and include such disparate consequences as population and habitat fragmentation, accelerated rates of soil erosion, and invasion of exotic plants along roadways. Indeed, "in public wildlands management, road systems are the largest human investment and the feature most damaging to the environment" (Gucinski et al. 2001:7). Summaries of the effects of roads on wildlife habitats and biological systems in general have been compiled by Forman and Alexander (1998), Trombulak and Frissell (2000), Gucinski et al. (2001), Forman et al. (2003) and Gaines et al. (2003)."

*Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger, 2005. "**Effects of Roads on Elk: Implications for Management in Forested Ecosystems**." Pages 42-52 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer*

Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group.

http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf

RESPONSE – Relevant to this project; it is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Forest Plan and provides secure wildlife habitat through management of open motorized road and trail densities.

COMMENT -

Road Construction Opposing View #48 - *"The consequences of road construction to wildlife are generally negative. Roads result in increased human access, habitat fragmentation, disturbance, and in some cases direct mortality due to vehicle collisions."*
"Research has documented an 80% decline in grizzly bear habitat use within 1 km of open roads used by motorized vehicles in Montana[9]. This has been ascribed either to bears avoiding humans or to the selective over-harvest of bears habituated to humans that would otherwise more fully use areas heavily influenced by people."

*Schwartz, Chuck Ph.D. - March 1998 "**Wildlife and Roads**", The Interagency Forest Ecology Study Team (INFEST) newsletter*

http://www.sf.adfg.state.ak.us/sarr/forestecology/fsroads.cfm

RESPONSE – This article addresses road-related habitat issues in Alaska, and speaks specifically about effects to grizzly/brown bears. While the article itself does not apply specifically to the Spring Gulch Timber Sale project, it does list some of the impacts roads can have on wildlife in general. The article also states that "Big game have been shown to avoid habitat adjacent to roads for up to ½ mile." Collision as a factor of road fragmentation typically is associated with larger high-speed highways, and as a result, does not apply to this project.

COMMENT –

Road Construction Opposing View #49 - *"The effects of forest roads on hydrology are related to the effects of forest clearing. Most logging requires road access, and the roads often remain after the logging, so there are both short and long-term effects.[94] Forest road surfaces are relatively impermeable. Water readily runs over the road surface and associated roadside ditches, often directly to a stream channel, with the net effect of extending channel networks and increasing drainage density.[95] In addition to providing conduits for overland flow, forest roads involve slope-cuts and ditching that may intersect the water table and interrupt natural subsurface water movement.[96] This diversion of subsurface water may be quantitatively more important than the overland flow of storm water in some watersheds.[97] The importance of roads in altering basin hydrology has been underscored in paired-watershed studies and recent modeling studies.[98] " (Pgs. 730 and 731)*
*Shanley, James B. and BeverleyWemple Ph.D., "**Water Quantity and Quality in the Mountain Environment**", Vermont Law Review, Vol. 26:717, 2002*
http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf

RESPONSE – Relevant to this project; this reference talks about hydrology in mountains in a general textbook approach discussing a number of accepted traits associated with wildland hydrology. The excerpt deals with the effects forest roads can have on hydrology based on a few other cited sources. The revised EA fully acknowledges these effects and discussing them in detail in the Water Resources analysis in the revised EA. The road maintenance work that will be completed prior to project implementation addresses the most critical effects the road system is having on the project streams by installing new culverts and reconditioning existing culverts, which decrease the effects roads in the project area have on the stream network.

COMMENT –

Road Construction Opposing View #50 - *"Roads are often the major source of soil erosion from forested lands (Patric 1976). Generally, soil loss is greatest during and immediately after construction."*
Swift Jr., L. W. ***"Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains.",*** *Southern Journal of Applied Forestry 8: 209-216. 1984.*
http://cwt33.ecology.uga.edu/publications/403.pdf
RESPONSE – The revised EA includes a comprehensive analysis of potential impacts to soils (Chapter 3, pages 169-196). Concepts and findings of the paper are compatible with the analysis.

COMMENT -

Road Construction Opposing View #51 - *"More subtle causes of habitat loss include the construction of roads and power lines. These linear barriers also have been correlated with a decline in neotropical migrant songbirds (Berkey 1993; Boren et al. 1999; Ortega and Capen 2002). Whether by forest conversion or the construction of roads and power lines, fragmentation subdivides habitat into smaller and smaller parcels. The result is an increase of edge habitat, or the boundary between intact forest and surrounding impacted areas. Small forests with large amounts of edge habitat are a hostile landscape for nesting neotropical migratory songbirds. In these areas, songbirds face two great threats: 1) the loss of eggs and nestlings to predators and, 2) parasitism by cowbirds."*

*Switalski, Adam "**Where Have All the Songbirds Gone? Roads, Fragmentation, and the Decline of Neotropical Migratory Songbirds**", Wildlands CPR,* ***September 8, 2003***

http://www.wildlandscpr.org/node/213

RESPONSE – The Wildlife Resource section of the revised EA includes findings related to migratory birds (revised EA, Chapter 3, pp. 122-127). It is determined that the proposed actions would not impact migratory birds.

COMMENT

Road Construction Opposing View #52 - *"Roads are a widespread and increasing feature of most landscapes. We reviewed the scientific literature on the ecological effects of roads and found support for the general conclusion that they are associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems. Roads of all kinds have seven general effects: mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotics, and increased use of areas by humans. Road construction kills sessile and slow-moving organisms, injures organisms adjacent to a road, and alters physical conditions beneath a road. Vehicle collisions affect the demography of many species, both vertebrates and invertebrates; mitigation measures to reduce roadkill have been only partly successful. Roads alter animal behavior by causing changes in home ranges, movement, reproductive success, escape response, and physiological state. Roads change soil density, temperature, soil water content, light levels, dust, surface waters, patterns of runoff, and sedimentation, as well as adding heavy metals (especially lead), salts, organic molecules,*

ozone, and nutrients to roadside environments. Roads promote the dispersal of exotic species by altering habitats, stressing native species, and providing movement corridors. Roads also promote increased hunting, fishing, passive harassment of animals, and landscape modifications. Not all species and ecosystems are equally affected by roads, but overall the presence of roads is highly correlated with changes in species composition, population sizes, and hydrologic and geomorphic processes that shape aquatic and riparian systems. More experimental research is needed to complement post-hoc correlative studies. Our review underscores the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota."

*Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. "**Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities**", Conservation Biology, Volume 14, No. 1, Pages 18–30, February 2000*

http://www.transwildalliance.org/resources/200922144524.pdf

RESPONSE – Relevant to this project; the citation is a general synthesis of some of the deleterious effects of roads on the natural environment. It is very broad based and while some of it pertains to conditions in the project area, it contains no specific information that can be used in the analysis. The revised EA recognizes some of these effects and in the case of aquatics, attempts to reduce the sediment-related effects project area roads have on stream channels by implementing BMPs.

Roads do obviously compact soil; however, authorized Forest roads as defined in 36 CFR 212.1 are not considered part of the productive land base. It is recognized that roads have the potential for effect to wildlife including lower standard, unpaved Forest roads. The effects of displacement and avoidance were addressed in the Forest Plan and it provides secure wildlife habitat through management of open motorized road and trail densities.

COMMENT

Road Construction Opposing View #53 - *"Roads are a major contributor to habitat fragmentation because they divide large landscapes into smaller patches and convert interior habitat into edge habitat. As additional road construction and timber harvest activities increase habitat fragmentation across large areas, the populations of some species may become isolated, increasing the risk of local extirpations or extinctions (Noss and Cooperrider 1994)."*
"Habitat fragmentation creates landscapes made of altered habitats or developed areas fundamentally different from those shaped by natural disturbances that species have adapted to over evolutionary time (Noss and Cooperrider 1994 in Meffe et al. 1997). Adverse effects of habitat fragmentation to both wildlife populations and species include:
"Increased isolation of populations or species, which leads to:

- *Adverse genetic effects; i.e. inbreeding depression (depressed fertility and fecundity, increased natal mortality) and decreased genetic diversity from genetic drift and bottlenecks,*
- *Increased potential for extirpation of localized populations or extinction of narrowly distributed species from catastrophic events such as hurricanes, wildfires or disease outbreaks,*
- *Changes in habitat vegetative composition, often to weedy and invasive species,*
- *Changes in the type and quality of the food base,*

- *Changes in microclimates by altering temperature and moisture regimes,*
- *Changes in flows of energy and nutrients,*
- *Changes in the availability of cover and increases edge effect, bringing together species that might otherwise not interact, potentially increasing rates of predation, competition and nest parasitism, and*
- *Increased opportunities for exploitation by humans, such as poaching or illegal collection for the pet trade."*

Watson, Mark L. "Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats." *Background and Literature Review 2005.*
http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf

RESPONSE – Relevant to this project; this paper includes a list of potential effects of roads and highways. It also includes an appendix with a literature review of road effects to wildlife and habitats, with the literature cited following it. The quoted section above lists potential effects of roads. It is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

COMMENT -

Road Construction Opposing View #54 - *"Our analysis also indicated that >70 percent of the 91 species are affected negatively by one or more factors associated with roads."*
"Roads in forested areas increase trapping pressures for martens and fishers, resulting in significantly higher captures in roaded versus unroaded areas (Hodgman and others 1994) and in logged versus unlogged areas, in which the difference was again attributed to higher road densities in logged stands (Thompson 1994). Secondary roads also might increase the likelihood that snags and logs will be removed for fuel wood. This could impact fishers, martens and flammulated owls, and also could have a negative effect on the prey base for goshawks (Reynolds and others 1992)."
"An additional, indirect effect of roads is that road avoidance leads to underutilization of habitats that are otherwise high quality."
*Wisdom, Michael J., Richard S. Holthausen Ph.D., Barbara C. Wales Ph.D., Christina D. Hargis Ph.D., Victoria A. Saab Ph.D., Danny C. Lee Ph.D., Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland, Wally J. Murphy, and Michelle R. Eames. "**Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications, Volume 2 – Group Level Results."** USDA Forest Service, PNW-GTR-485, May 2000.*
http://maps.wildrockies.org/ecosystem_defense/Science_Documents/Wisdom_et_al_2000/Vol_2a.pdf

RESPONSE – Relevant to this project; it is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Forest Plan and provides secure wildlife habitat through management of open motorized road and trail densities**.**

COMMENT -

Road Construction Opposing View #55 - *"According to the DEIS, the Forest now manages a total of 5,914 miles of roads across the Forest. Scientific literature has established that roads have numerous widespread, pervasive and, if left untreated, long-lasting biological and physical impacts on aquatic ecosystems that continue long after completion of construction. (Angermeier et al. 2004). Roads increase surface water flow, alter runoff patterns, alter streamflow patterns and hydrology, and increase sedimentation and turbidity. Roads are the main source of sediment to water bodies from forestry operations in the United States. (US EPA 2002). Road construction can lead to slope failures, mass wasting and gully erosion. Road crossings can act as barriers to movement for fish and other aquatic organisms, disrupting migration and reducing population viability. (Schlosser and Angermeier 1995). Chemical pollutants that enter streams via runoff, such as salt and lead from road use and management, compound these impacts. Most of these adverse effects are persistent and will not recover or reverse without human intervention. The techniques for road remediation are well established, agreed upon and readily available. (Weaver et al. 2006)." (Pg. 2)*
Wright, Bronwen, Policy Analyst and Attorney Pacific Rivers Council, Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou, National Forest Travel Management Team

http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pdf

RESPONSE – Relevant to this project; the citation is a comment letter to the Forest Service on travel management in the Oregon Cascade Mountains - a very different climate and setting than the northern Rockies. The letter cites other literature that discusses the adverse effects of roads on aquatic environments. The revised EA describes the existing condition of haul route roads and any impacts to adjacent streams. It also analyzes the effect, on sediment reduction, of proposed road improvements.

COMMENT -

Road Construction Opposing View #57 - "Forest fragmentation occurs when large, contiguous blocks of forest are broken up into isolated islands by development, roads, or clearing for agriculture. Just as inbreeding among the royal families of Europe spread hemophilia, forest fragmentation negatively impacts the long term sustainability of both plant and animal communities. Geographic isolation results in inbreeding and diminishes biodiversity."

Zimmerman, E.A. and P.F. Wilbur "**A Forest Divided**", New Roxbury Land Trust newsletter, 2004

http://www.ourbetternature.org/forestfrag.htm

RESPONSE – Road-related impacts listed by the article include habitat fragmentation, inbreeding and diminished biodiversity stemming from isolation of populations, roadkill, and increased predation of woodland birds. It is not applicable to the Spring Gulch Timber Sale project.

Comments from Dick Artley – Dr. Jack Cohen References Attachment

COMMENT (Dick Artely, from his attachment titled "*any NEPA document that analyses treatments to reduce the risk of fire damage to homes located in the WUI must analyze a Dr. Jack Cohen alternative in detail*")

RESPONSE – The commenter begins this attachment with this primary statement:

Dr. Cohen's Research Findings Represent Best Science and Empirical Evidence Shows his Fire Damage Risk Reduction Methods that remove the Fine Fuels Near the Home are Far Superior to Hazardous Fuel Removal

Mr. Artley then follows this statement with 17 pages of excerpts from Dr. Cohen's research, all arguing that fuel reduction on National Forest System Land is futile in terms of protecting structures on privately owned land adjacent to public lands. Each comment included in this attachment has been evaluated and considered. For clarity, the entire attachment is addressed with this response. The attachment in its entirety is included in the project file for reference.

In the agency response, it is important to note that the Spring Gulch Timber Sale is not designed to protect structures on private land. Rather it is designed to reduce the probability of extreme fire behavior within the areas that would be treated.

As discussed in the Fire and Fuels section found in Chapter 3 of the revised EA, the Alternative 2 is not meant to stop a fire but rather alter its characteristics such as lowering intensities and reducing sustained crown fire potential, thus increasing the chances of successful suppression efforts. Cohen (2000) states that wildland vegetation management is not without purpose and should occur. He also explains that the extent of the home ignition zone corresponds more to specific home and community ownership than to the landscapes of federal, state, and local land management agencies.

Mr. Artley's argument that Dr. Cohens' research somehow has bearing on the project is unclear in this scenario. Creation of a "Dr. Cohen Alternative", as suggested by the commenter would do nothing to address any element of the purpose and need for this project.

(Dick Artley, from his attachment titled "Attachment 9a Glyphosate"

Opposing Views, Attachment #9a, Herbicides Containing Glyphosate should Never be Applied to Areas where Mammals (including humans), Fish, or Birds Might Visit Even Casual Contact Causes Lethal Diseases and (18) Opposing Views Attachment #18 Following Label Directions on "Approved" Herbicides Containers does not Assure Safety

COMMENT – (NOTE) following 92 pages of excerpts and quotes from 95 various papers and sources, Mr. Artley summarizes his submission with the following conclusion, which we respond to. This is a summary of his attachment, and the attachment is available in its entirety in the project file.

The results of independent, unbiased research on glyphosate-containing herbicides indicate this chemical is causing: birth defects, non-Hodgkin's lymphoma, mitochondrial damage, cell asphyxia, miscarriages, attention deficit disorder, endocrine disruption, DNA damage, skin tumors, thyroid damage, hairy cell leukemia, Parkinson disease, premature births, decrease in the sperm count, harm to the immune system in fish, death of liver cells, severe reproductive system disruptions and chromosomal damage.

Non-native plants are causing havoc to the native forest ecosystems. However, this does not justify inflicting mammals & birds (including human visitors to the forest) with one of the many physical problems listed above.

Fish? Just a minor amount of spray that contact water will kill aquatic life.

It's unethical and unprofessional to apply this tragic poison to land owned by other people just because the Forest Service's outdated approval documents say it's OK.

There are more costly (yet equally effective) alternatives to deadly herbicides when eradicating non-native plants. Please use them. This is a government expenditure that the public would support.

Please read Dan Rather's very recent September 22, 2011 investigative report about the EPA's corrupt approval process of man-made chemicals:

http://www.panna.org/blog/dan-rather-pesticides-bees

Ask yourself this. Am I willing to subject animals and/or humans to a painful cancer death based on 10 year-old USFS data provided to them by the Monsanto Corporation?

RESPONSE – the primary statement leading this attachment is "*Herbicides containing glyphosate should never be applied to areas where mammals (including humans, fish, or birds might visit.*"

Use of herbicides, including glyphosate, was authorized in the Kootenai National Forest Invasive Plant Management Record of Decision, dated April 2007. All use of glyphosate under this decision is applied in strict compliance with herbicide label directions, as required by law, regulation and policy.

Glyphosate is a non-selective herbicide. It has little soil activity and is not absorbed in the rooting zone. Its non-selectiveness cause this herbicide to kill most plants where applied, including desirable native plants. It is approved for us adjacent to water and can have utility within riparian buffers. Roundup is the commercial name for this herbicide.

Use of glyphosate in the project area would be applied as spot application (on the target plant only), and then only on aggressive, prolific species of concern, such as Rush Skeleton Weed. Glyphosate will not be used in broadcast applications, or in any winter range areas. Its' use in the project area is not anticipated, but the option of its use is available if a specific target species infestation is found in the project area.

Interdisciplinary team members and the Responsible Official have reviewed the attachments to the commenter's letter and have determined the content of the literature cited does not inform the environmental effects analysis or the Responsible Official's decision to select the actions described in the revised EA. The literature referenced is of a general and generic nature and is not pertinent to the site-specific analysis required of NEPA and NFMA.

The 2007 ROD for the Kootenai National Forest Invasive Plant Management, associated EIS, FEIS, and project record are hereby incorporated as reference.
