

## **Middle East Fork Project Summary of Objection Issues and Suggested Remedies**

**Project Name:** Middle East Fork Hazardous Fuels Reduction Project  
**Objector:** Jeff Juel for The Ecology Center  
**Objection Number:** 0006

**Issue 1. (PROCESS) We object to the selection of Alternative 2 as the preferred alternative. The actions taken by the Forest Service reveal that the decision has already been made to implement Alternative 2, despite claims (and legal requirements) to fairly and objectively evaluate all three alternatives.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Region acknowledges that the objector disagrees with the preferred alternative. In an HFRA process focus is on early collaborative participation to develop one action alternative that meets the interests involved in the collaborative process. This was done in the Middle East Fork Project and is embodied in Alternative 2. In November 2004, parties with concerns about Alternative 2, including the objector, submitted another action alternative which was analyzed using the same objective measurement criteria to assess how well the 3 alternatives meet the purpose and need.

Regarding actions taken by the Forest Service; it is inappropriate for Forests to make an irreversible or irretrievable commitment of resources prior to a decision. However, it is appropriate, and not uncommon, for some preliminary work to be done on the ground prior to decisions especially in northern tier states where field seasons are so short. Forest Service policy in FSM 2432.31a states that marking timber is not implementation of a decision for the purposes of NEPA. In the case of vegetation treatments, early marking allows the public, FS and other agency specialists, and land managers to have a better visual understanding of how the proposed treatment will actually look. In the past, members of the public have expressed concerns that it is difficult to visualize what the Forest was proposing.

All three alternatives were analyzed using the same objective measurement criteria.

**Issue 2. (PROCESS) The Forest Service has done a lousy job of collaboration and treated people with opposing viewpoints poorly.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Forest Service's intention is to treat all interested parties with respect. As mentioned in Response to Issue 1, with HFRA projects the emphasis is on collaboration early in the process, to develop one acceptable proposed action. For the Middle East Fork project that early work started right after the fires of 2000. After the development of the Middle East Fork proposed action with interested parties, the objector, along with other parties, made it clear they had opposing viewpoints and did not support the proposed action.

They submitted a conceptual alternative for consideration. The Forest Supervisor chose to consider that alternative for analysis in the Final EIS as provided for in the HFRA process. Three alternatives were analyzed in the NEPA analysis using the same objective measurement criteria. The Forest followed the HFRA process closely and have worked to consider all views. There is disagreement on certain issues and the Forest disclosed those differences in the FEIS.

**Issue 3. (PROCESS) The objection process is a sham designed to circumvent the spirit of NEPA and appeals. The main purpose of the objection process is to insulate the decision from litigation and make it look as if the Forest Service objectively considered all comments and appeals.**

**Suggested remedy:** None given.

**Regional Review and Response:** We disagree with this opinion.

**Issue 4. (PROCESS) The Forest Service did not genuinely consider or respond to independent scientific opinion in the DEIS or FEIS.**

**Suggested remedy:** None given.

**Regional Review and Response:** Information was added throughout the FEIS based on comments and scientific literature brought forward in comments (Please see Volume II, Appendix H). The information in the FEIS is solidly grounded in science and contradictory evidence is presented and discussed where appropriate.

**Issue 5. (COMM/DFB) The Forest Service has used the highly speculative propaganda of catastrophic fire and continued widespread beetle killed get the public to accept the known and sure ecosystem damage that will be caused by Alternative 2. The degree of speculation is not disclosed in the FEIS.**

**Suggested remedy:** None given.

**Regional Review and Response:** Concerning the comment “known and sure ecosystem damage that will be caused by Alternative 2” project design and mitigation measures have been conscientiously designed to eliminate or minimize impacts from implementing this alternative.

**Catastrophic:** *A violent or sudden change in a feature of the earth (Webster's Dictionary).* Catastrophic is not used to describe fire effects in the MEF FEIS.

**Risk:** *The possibility of meeting danger or suffering harm (Webster's Dictionary).* When risk is used relative to wildland fires, it refers to the probability of escape resulting in financial and ecological loss. Alternative management scenarios generate different degrees of risk and ultimately a different set of economic outcomes (Hesslin and Rideout, 1999).

**MEF Fire analysis** identifies the susceptibility of a project/planning area to wildfire in terms of risk and hazard to determine effects of proposed vegetation and fuels altering projects.

1. ***Fire Risk*** applies to the probability of an ignition occurring as determined from historical fire record data.

The fire ignitions history of the MEF area is documented in the FEIS on pages 3.1-15 and 16, and in the cumulative effects section Appendix B. It is based on actual fire reports and scientific studies (Arno, 1976). Potential fire size, without suppression action, is estimated for the MEF area using FARSITE and documented on pages 3.1-26 and 40 to 46. A local fire risk analysis using PROBACRE, which includes suppression actions, is cited in the references (Boyd, 2002). The results show that the probability of having a fire that exceeds the suppression capabilities of firefighting handcrews is 37 percent in 1 year. On average, one of those fires will result in a large fire (180 to 15,000 acres) every 6.5 years (5 to 7 year range). Boyd's report also corroborates the MEF finding that crown fires in this area are fuel driven and generally will escape initial attack suppression.

2. ***Fire Hazard*** identifies the availability of fuels to sustain a fire using fire modeling results in varied intensity levels of fire behavior prediction. Where high risk coincides with high hazard, the probability of fire with undesirable effects is more likely.

The hazard portion of the MEF analysis correlates directly to predicted fire behavior that is a function of fuels, weather, and topography. The fuels and topography portion of the fire behavior triangle were analyzed through use of FVS-FFE, FlamMap, and FARSITE. Changes in Flame Length, Rate of Spread, and Crowning Index for the WUI are reported in the FEIS on pages 3.1-27 to 51.

The fuels relate directly to standing vegetation as well as dead and down surface fuels. MEF field data (stands exams and Brown's transects) was collected for the analysis. Representative weather data is from WIMS archives for local weather stations (FEIS, pp. 3.1-10 and 11). Fire behavior predictions are based on 90<sup>th</sup> percentile conditions.

3. ***Values At Risk*** include critical watersheds/viewsheds, erosive soils, threatened and endangered species habitat, commercial timber, communities at risk and other infrastructure (communications sites, campgrounds, summer home groups etc). The values help establish priorities and quantify the effects of the action and no action alternatives.

**Douglas-fir Beetle Hazard Assessment** The DFB hazard rating is explained in the FEIS on pages 3.2-21 to 23. It is an index for the degree of future potential for DFB activity. It is based on scientific studies and expert opinion. It is not appropriate to assign statistic measures to an indexed rating system.

**Issue 6. (PROCESS) The FEIS failed to disclose the degree of precision/error in the estimates derived from models and failed to present any confidence intervals, standard deviations, or standard errors in association with its analytic conclusions. As such, the information is scientifically invalid and unreliable, and inadequate to inform the decision maker or the public.**

**Suggested remedy:** None given.

**Regional Review and Response:** Each of the resource sections have a methodology section where the methods and their limitations are discussed. The Project File contains additional information on the modeling assumptions and limitations [Methods for Fire Behavior Modeling by Tonja Opperman (PF\_FIRE\_023)]. Not all of the analysis tools are based on statistics where confidence intervals, standard deviations or standard errors can be assessed. This does not render the information scientifically invalid, unreliable, or inadequate. Vegetation data (stand exams, mortality modeling, etc.) does have statistical analysis which is disclosed in the FEIS and included in the project file. This information shows the accuracy, standard deviation, standard errors and confidence intervals of the estimates (SILV-042, SILV-45, SILV-69, SILV-52, SILV-6).

**Issue 7. (COMM) The WUI boundary used in the FEIS extends too far out from private land.**

**Suggested remedy:** The fuel treatments in Alternative 3 are much more logically focused to the areas near the private boundary.

**Regional Review and Response:** The Middle East Fork (MEF) Wildland Urban Interface (WUI) boundary was located based on predicted fire behavior, values at risk, and local expert opinion on likely suppression tactics. The MEF WUI is the same as the Bitterroot Community-Based Wildland Fire Risk Mitigation Plan (Community Fire Plan, PF-IRA-006). The Community Fire Plan is a valley-wide look at the population densities, infrastructure and hazardous fuel conditions. This methodology is recommended by The Wilderness Society in their paper *Targeting the Community Fire Planning Zone* (Wilmer and Aplet, 2005).

The values at risk are not just the structures and infrastructure. The scenic and recreational values afforded by the forest are greatly prized by the community. Alternative 2 will result in a much greater positive change in fire behavior and reduction of unacceptable losses due to fire, than does Alternative 3.

**Issue 8. (WATER/PROCESS) None of the alternatives in the FEIS contains a comprehensive set of restoration actions. Particularly lacking are watershed restoration activities. Their omission unreasonably limits the range of alternatives, and proves our point that HFRA is more about logging than addressing genuine ecosystem restoration needs.**

**Suggested remedy:** None given.

**Regional Review and Response:** This is addressed in the responses to Public Concerns 10017, 3620, and 3152. In summary, in the draft the Forest did not include restoration beyond what was needed for mitigation to offset project effects. In response to public comment, additional mitigation was analyzed and included to reduce sediment impacts in the analysis area and meet the direction described in the Draft Bitterroot Headwaters TMDL. In the Final Environmental Impact Statement (FEIS) additional watershed improvement projects were identified that would

help to directly restore watershed conditions in Jennings Camp and Guide Creeks, two watersheds within the analysis area historically impacted by valley bottom roads and/or high road densities. This restoration/mitigation would eliminate or restore 13 stream crossings, decompacting and putting into long-term storage 4.2 miles of road, and reduce potential access for Off Highway Vehicles (OHVs) along an intermittent tributary to Jennings Camp by recontouring old skid trails. The restoration/mitigation also includes gating a non-system road in Springer Creek that currently allows for OHV access to a closed road system; allowing for only administrative or permittee access, and replacing or removing four fish barrier pipes that are located in Springer (2 pipes), and Bertie Lord Creeks (2 pipes). This restoration work is included in both action alternatives with the difference being that in Alternative 2 all but the fish passage restoration would be accomplished using project related funds, while in Alternative 3 additional appropriated dollars would be needed to complete most of the identified restoration work. Please see Table 3.3-4 and 3.3-5 for details on proposed restoration/mitigation and likely funding opportunities.

**Issue 9. (COMM) In Alternative 1, the FEIS analysis grossly overstates the possible damage to the ecosystem caused by fire. In Alternative 2, the possible damage caused by fire is erroneously considered to be negligible or nonexistent.**

**Suggested remedy:** None given.

**Regional Review and Response:** Fire severity is classically defined as fire effects on soil and erosion. A common method to estimate fire severity is to look at tree mortality which is an affect of fire intensity. The Bitterroot Fire 2000 Assessment found 90-100 percent tree mortality to be an indicator of "medium" to "high" severity. The MEF WUI analysis shows the predicted amount of crown fire, which typically results in 90-100 percent mortality, as a result of each alternative. Alternative 2 reduces potential crown fire in the WUI to 25 percent, but does not eliminate it (FEIS page 3.1-51). Alternative 1, which does not reduce naturally increasing fuels, increases potential crown fire in the WUI to 35 percent.

**Issue 10. (GEN) Logging the remaining patches of native forest combined with planting trees not adapted to those specific areas is likely to negatively affect the genetics of forest stands in the area.**

**Suggested remedy:** None.

**Regional Review and Response:** The commercial harvest is primarily of dead and dying trees. If they are dead they can not pass on genes. Response to Public Concern 3608 addresses the issue of plant genetics. In summary, the proposed salvage and thinning treatments (commercial harvest, understory slashing, thinning by prescribed fire) are intended to restore the conditions and disturbance processes that existed in the past. Part of this restoration strategy includes genetic conservation. Salvage of dead trees will not directly affect the genetic composition of these forest trees but will, along with thinning, change the environmental conditions that these stands develop in over time. More open conditions and prescribed burning will encourage the development of an understory of trees, shrubs, and grasses. Alternative 2 will provide greater

diversity of stand conditions within the planning area. The variety of stand structures, species, and stand ages will be less homogenous than what exists today.

Studies of genetic variation within and between populations of Douglas-fir attest to its abundant within-stand and between-stand genetic diversity (Rehfeldt, 1990, Linhart and Davis, 1990). Any disturbance whether natural or human-caused will alter the genetic diversity of these forest stands, and subsequent stand development will depend on the interaction between plant genetics and environmental conditions. Proposed treatment prescriptions include several provisions for conservation of genetic diversity. They are: 1) retention of the largest healthiest trees which have shown to be well-adapted to the site in the past (Zobel and Talbert 1984, Fins, 1993, Dewald and Mahalovich, 1997); 2) reforestation with seedlings grown from local seed collected from similar sites and with a broad genetic base (USDA Forest Service Seed Handbook 2409.26f, Rehfeldt 1989, Linhart and Davis, 1990); and 3) managing for genetic variation by retaining a mix of trees from the "parent" stand, natural regeneration, and planting. Environmental conditions in the future will invariably select those trees best adapted to the site during stand development (Freidman, 1997).

Where planting is recommended, a variety of species will be planted and managed along with the naturally regenerating understory of trees, shrubs, and grasses. Additional information on reforestation is included in the final FEIS in section 3.2.8. Planting of ponderosa pine is highlighted in the DEIS because this species is in decline (described in the DEIS in several sections including 3.2.1, 3.2.6, and 3.2.8). The genetic base of this species has already been significantly altered, in part, through past harvesting. Not only were the biggest and best trees selectively removed and the less desirable trees left, but the overall reduction in number of ponderosa pine trees left often resulted in an insufficient number of trees to provide adequate genetic diversity (DeWald and Mahalovich 1997, Mahalovich 1993, Zobel and Talbert 1984). Without planting, ponderosa pine regeneration would be scarce and the genetic diversity limited. Region 1 has very sophisticated seed transfer guidelines for all conifer species (USDA Forest Service. Forest Service Manual 2475 and Forest Service Seed Handbook 2409.26f). They are based on extensive genetic testing and are designed to retain both patterns of natural variability and adaptability.

**Issue 11. (GEN/COMM/OTHER) 1) The Forest Service asserts that fire suppression is the root cause of the vegetative changes that have occurred in recent times. We feel that climate change is the bigger cause.**

**Suggested remedy:** 2) Leave previously uncut forest intact so genetic diversity will be maintained and the future forest will have resilience to deal with the effects of climate change on forests. 3) Not only does Alternative 2 fail to address a comprehensive treatment of the WUI, it would remove old trees that store a lot of carbon for a long time. 4) Balance carbon storage and fuel management.

**Regional Review and Response:** 1) The fact that forests of today developed under a cooler, moister climatic regime than the current or likely future regime has is not disputed. Whether the role of fire suppression or climatic shift has been more instrumental in shaping the last 100 years of forest development is debatable. Three recent articles regarding the topic of fire, fuels, and

climate change have been reviewed since the publication of the DEIS (Schennagel, et al. 2004, Witlock 2004, and Pierce et al 2004). A key element to keep in mind is that most of the discussion is centered around the Ponderosa pine type, where as the majority of the MEF project contains a mixed-conifer type forest (Habitat Type Group B). Only the Schennagel 2004 article discusses mixed forests and fire regimes: *"Since the 19th century, the densities of relatively fire-intolerant and shade-tolerant species, such as Douglas-fir and grand fir, have increase in response to the suppression of low-severity fires in areas that historically experienced mixed-fire regimes (Aron, et al. 1995, Kaufmann et al. 2000). Increases in density probably occurred more commonly at lower elevations, on drier aspects, and adjacent to grasslands where, low severity fires were more dominant historically. Sites that previously supported denser stands because of topographic and edaphic conditions have probably changed less as a result of fire suppression...With fire suppression, forests that historically experienced mixed severity regimes have developed a more homogeneous forest structure across the landscape, resulting in larger area of continuously dense forest and perhaps in larger patches of crown fire than were witnessed historically."*

2) The commercial harvest is primarily of dead and dying trees. If they are dead they can not pass on genetic material.

3) Alternative 2 takes into account the fuels treatments completed during the past 2 years under the Middle East Fork Community Defense Zone (CDZ) project. That project focused on citizen and firefighter safety.

4) Balancing carbon storage and fuel management was addressed in the Response to Public Comment 31212, FEIS Vol. II page 100. In that response it is stated that mitigations backed by literature are provided for the Middle East Fork project for soils. To meet the purpose and need of the project, levels of coarse woody debris will range towards the minimums as opposed to optimums within the WUI. Soil organic material stores large amounts of carbon. The project's design and the mitigations are in place to retain adequate amounts of organic material.

**Issue 12. (COMM) The FEIS did not acknowledge the limitations of the fire history methodology it uses, and disclose what project area data it is relying on.**

**Suggested remedy:** Uncertainty should be explicitly stated in fire-history results and bracketing the range of possible population mean FIs.

**Regional Review and Response:** The fire history study for the Tolan Creek area (Arno, 1976) was used for estimating the fire-free interval for the MEF project. On page 12 of his study, Arno states: *"Resource managers should be able to approximate pre-1900 fire frequencies in various parts of the Montana portion of the Bitterroot National Forest by extrapolating from Table 1"*. The data from "Table 1" is referenced in the FEIS fire history section, page 3.1-15, the fire frequency for Ponderosa and Douglas-fir types is 11 and 16 years respectively. The ranges for those averages from "Table 1" are 2-18 years and 4 to 29 years respectively (Arno, 1976, page 4). Arno explains the limitations of this work on page 3: *"Frequencies were averaged for all stands in a given habitat-type grouping each study area. These habitat-type groups (Table 1, columns 1 and 2) serve as a basis for comparison of fire frequencies within as well as among the*

*study areas. ...the fire frequencies (Table 1) represent the average intervals between fires detected in a given stand. On one hand it might be argued that these intervals are actually shorter than would be expected for a given smaller stand because some of the fires detected did not cover the entire 200- to 800- acre unit. However, this effect is counterbalanced by the probability that many small or low-intensity fires were not detected in a given stand by the scarred-tree sampling."*

**Issue 13. (SOILS) We object to the Forest Service's dodging the entire issue of maintaining soil productivity as NFMA mandates. The Region 1 Soil Quality Standards found at FSM 2500-99-1 and FSH 2509.18, the FS assumes that maintaining soil productivity is achieved simply by limiting detrimental disturbance to an arbitrarily determined percentage of an activity area.**

**Suggested remedy:** None given.

**Regional Review and Response:** It is recognized that ground disturbing activities can have impacts on the soil resource; the key is to minimize the impact (see public comment response 3121, Appendix H, pg 1 of 193 and 31214, Appendix H, pg 103 of 193). The Soil Quality Standards (SQS) were developed based on the best available science (Powers 1990). The 15 percent SQS is only part of what the Forest looks for in evaluating NFMA and soil and site productivity; they also look at the vegetation and hydrology of the site to ensure that it is functioning to capture, store, and safely release water and erosional materials.

**Issue 14. (SOILS) 1) We note the Forest Soil Scientist was taken off the Project following the issuance of the DEIS. 2) We object to the FS changing the soils analysis without clearly explaining the methodological differences between the "Regional Peer Review" that disagrees with the results of the Forest Soil Scientist's analysis in the DEIS.**

**Suggested remedy:** None given.

**Regional Review and Response:** Regional Review was requested by members of the public in comments received on the DEIS. Ken McBride was informed of and asked to participate in the Regional Review but elected not to. In Ken's letter that you included in your objection (Appendix 4) there are errors in his table. Since Ken did not participate in the review it is understandable that he was not aware of the exact methods used or numbers of samples taken in the peer review. The peer review included: 77 points; Moscow Lab calibrated penetrometer - 47 points with 3 insertions at each point; Shovel test soil pits dug at approx each location - 77 points (these pits are "mini" soil pits the depth of the shovel); At each point/shovel pit, the team looked at soil structure, root abundance, vegetation. This is based on 7 soil categories defined in PF-SOIL-089 (Howes Survey Method). The regional review also used Global Positioning System (GPS) to document the location of each transect. It should be emphasized this was a team approach (10 soil scientists including soil researchers who have projects on the Bitterroot National Forest (BNF) so they are very familiar with the soils), thus there was much conversation at each shovel pit so although the group had not been on the site before, their collective knowledge of soil properties lead to reasoned calls. Also, the group did have available to them the soil survey, the soil survey maps, and air photos. As stated in the FEIS on page 3.5-

3, the 10 soil scientists on the review, including 3 researchers, all came within about 10% of each other using the "Howes" survey method.

**Issue 15. (SOILS) 1) The FEIS fails to distinguish meaningfully between "soil damage" and "detrimental soil damage." 2) The FEIS does not provide any quantification of productivity reductions or losses due to any level of soil displacement. 3) The FEIS does not adequately quantify disturbance due to prescribed burning, firelines, temporary roads, landings, off-road motorized travel, and livestock grazing. 4) The FEIS is written as if soil damage outside of proposed treatment units and temporary roads can simply be written off or ignored.**

**Suggested remedy:** None given.

**Regional Review and Response:** 1) Detrimental soil damage is defined in Forest Service manual direction. There is also a productivity difference between soil disturbance and detrimental damage. Detrimental damage equates to site impairment; the natural community cannot grow or is not sustainable. Size and extent of the disturbance is an important consideration here. For example, small areas of compaction may not impair root development and plant growth while large areas of deep or dense compaction may result in conversion of a site to annual species. Soil disturbance acknowledges that humans have changed the site (compaction, displacement, burning, reduced organic matter, etc.) and affected the soil but that the natural community and soil processes are still in place and are sustainable. Soil disturbance when severe enough to meet SQS definitions, is detrimental.

2) Productivity was discussed in qualitative terms in the FEIS (3.5-13, 3.5-14, 3.5-16 through 3.5-20 and 3.5-28 through 3.5-30). Loss of productivity due to soil displacement is not quantifiable, that is why the Forest discusses the topic qualitatively. For example, WEPP does not equate to detrimental damage for erosion since the aerial extent of erosion and where the material is deposited needs to be considered.

3) See Table 3.5-6 on page 3.5-45 of the FEIS for summary of effects on the soil resources from handpiling and burning, new temporary roads and landings. On page 3.5-34 it states that "Tables 3.5-2 and 3.5-3 illustrate the existing level of soil disturbance found in proposed units. This existing disturbance is the result of past activities. Tables 3.5-4a and 3.5-4b highlight those past activities that overlap in time and space with units proposed in Alternatives 2 and 3, respectively Table 3.5-2 and 3.5-3." If livestock grazing or off-road motorized travel or other activities disturbed soils in these units then it would have contributed to this condition. Grazing and ORV use are also qualitatively addressed on pages 3.5-38 and 3.5-39 respectively.

4) The analysis area for soils is the unit. Cumulative effects to soils need to overlap in time and space and so are not expected outside the units. See pages 3.5-33 through 3.5-47 of the FEIS.

**Issue 16. (SOILS) Our comments on the DEIS included: "The DEIS does not disclose the relevance or meaningfulness of the percent detrimental disturbance estimates provided by subwatershed. What is the relevance of the areal extent of management-induced soil damage over such a geographic area?" The Forest Service's response to that comment**

**states: “The cumulative effects section, FEIS 3.5.5.C has been re-written from the DEIS.” There is no FEIS section 3.5.5.C. The FS simply refused to answer the question, and in fact removed from the FEIS the statements that elicited our question.**

**Suggested remedy:** None.

**Regional Review and Response:** The landscape level (7<sup>th</sup> level sub-watershed) Geographic Information System (GIS) soils analysis was conducted in January and February 2005 for the Middle East Fork project. The objective was to help evaluate overall watershed condition related to soil and water processes at the 7<sup>th</sup> level sub-watershed scale. Using information (GIS and Timber Stand Management Record System [TSMRS] and INFRA databases) about past disturbance from harvest activities, the road system, and fire history; a disturbance rating was assigned to each timber stand polygon. This information was then combined to the 7<sup>th</sup> level watershed scale (PF-SOIL-006, 007).

The Forest found, based on field review, the GIS analysis did not give them information they could correlate to either site-specific detrimental soil disturbance or stream channel condition. Though the analysis could provide information as to the location of disturbance on the landscape (maps in PF-SOIL-082, 083, 084), this disturbance could not be linked to detrimental disturbance and Regional Soil Quality Standards (SQS). This site-specific link is not possible because of the variability in soil texture, the amount of organic matter and ground cover, soil response to past projects, and the intensity of past projects.

It should be noted that this exercise was not a substitute for unit-specific soil condition surveys or determinations. Unit-specific soil condition surveys were conducted during the summer of 2004 (PF-SOIL-078 and 079). It is this unit-specific information that is evaluated against the Regional SQS (FEIS Table 3.5-2).

Further, as illustrated in the Watershed section on page 3.3-10, there was little correlation between high levels of soil disturbance at the sub-watershed scale (as calculated by the landscape analysis) and stream channel condition. For example, the landscape level analysis from the Bertie Lord Creek existing condition is discussed on page 3.3-15 as follows:

*“A GIS review of past activities within Bertie Lord indicates that approximately 21 percent of the watershed has likely experienced soil disturbance due to ground based yarding or dozer piling, this occurred in the Sleeping Child burn area that was harvested following the fire (PF-SOILS-6 and SOILS-90). This level indicates a possible concern for hydrologic function such as increases in overland flow that could result from detrimentally compacted soils. However, this legacy watershed level soil conditions is not well correlated with stream condition because of the many interconnected variables between soil and water yield.*

*Stream surveys in Bertie Lord Creek indicate that channel conditions are fair and likely on an improving trend. The area in Bertie Lord Creek highlighted by this analysis is within the Sleeping Child burn area and was heavily roaded and harvested in the 1960s. The majority of these roads, old harvest units and burned area, are now overgrown with dense stands of lodgepole pine. The roads are no longer accessible to vehicle travel.”*

**Issue 17. (SOILS) 1) We object to the lack of any meaningful limitation, on a watershed basis, of the amount of soils so damaged permanently or for the long-term. 2) We object to**

**the FEIS's assumptions that the use of BMPs will result in meeting soil quality standards and maintaining soil productivity.**

**Suggested remedy:** None given.

**Regional Review and Response:** 1) Soil disturbance is limited on both a unit and landscape basis through the use of mitigations and Best Management Practices (BMPs). One of the primary means of reducing the aerial extent of soil disturbance is through the use of designated skid trails and carefully matching the logging system to the ground conditions. For example, to the greatest extent possible, the Forest aligns new skid trails on top of existing skid trails. Exceptions may occur if the past skid trails used ephemeral drainages in which case it is preferable to designate a new skid trail elsewhere. In addition, skid trails are limited to the minimum needed to remove logs from the site. There are no watershed level thresholds on the Bitterroot National Forest (BNF).

2) Various monitoring results support the FEIS's analysis of BMP effectiveness including: Monitoring on BNF – 2004 Department of Forestry Audit report. BMP monitoring on the Lolo National Forest. Monitoring from fires of 2000 unit logs – not summarized. This is explained on page 3.5-28 of the FEIS.

**Issue 18. (SOILS) We object to the FEIS's extensive reliance on anecdotal evidence regarding levels of impact in past projects, without disclosing the accuracy, reliability, and validity of such anecdotal evidence.**

**Suggested remedy:** None given.

**Regional Review and Response:** Past and many current monitoring efforts are not always based on statistical design; however this does not mean that the data is not useful, reliable, or accurate. The FEIS discloses data when reported based on ocular estimates or other than statistical, designed sampling. In these cases, to the extent possible, multiple references are used to substantiate statements.

**Issue 19. (SOILS) "Rehabilitation of landings, skyline corridors, temporary roads, and burn piles will improve soil productivity in the long-term (greater than 10 years)." (FEIS at 3.5-23) No quantitative basis to put this statement in proper context is provided.**

**Suggested remedy:** None given.

**Regional Review and Response:** Please see pages 3.5-32 through 3.5-33 of the FEIS to provide context. Detailed information on restoration can be found in PF-SOIL-091. In addition, a restoration plan was completed for all units that are suspected of exceeding soil quality standards. It can be found in PF-SOIL-101.

**Issue 20. (SOILS) We object to logging activities that would result in "units that exceed soil quality standards" (FEIS at 3.5-26). The "site specific restoration plans" to follow sound like empty promises. In essence the SQS allow the FS to maintain land productivity**

**in its presently severely reduced status-or further damage it, revealing the failure of the SQS in meeting NFMA's requirements.**

**Suggested remedy:** None given.

**Regional Review and Response:** Some unit soils are more at risk than others but through project design and mitigation measures the objective is to not exceed soil quality standards. Our measure of meeting Soil Quality Standards (SQS) is that when activities are completed within a unit, the unit does not exceed 15 percent in detrimental soil conditions. Units that were above SQS prior to harvest would be left such that post-activity detrimental soil damage is no more than was found prior to activities and that the unit is on an improving trend.

A restoration plan was completed in August 2005 (SOIL-101). The general finding is that active soil amelioration opportunities are in fact limited as stated in the FEIS. The primary reason for little active soil amelioration opportunities within the sale area is the presence of noxious weeds and the desire to limit further spread by not providing a seed bed through active amelioration. Further, many of the roads and old skid trails identified in the FEIS have good cover of native grass, shrubs, and trees. Moving equipment onto these sites would negate the vegetation and hydrologic recovery that is already occurring. This means that no additional detrimental disturbance can occur in these units after treatment. Project design, mitigations, and Best Management Practices (BMPs) have been proposed to limit any additional detrimental soil disturbance in these units.

**Issue 21. (OTHER) Logging, burning, and road and access management activities will exacerbate the distribution of noxious weeds. Mitigation measures are insufficient to prevent the spread of existing and introduction of new weeds, and will allow degradation of plant communities and wildlife habitat.**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue was addressed in response to Public Concern 35004. Also, the risk of weed spread and the predicted effectiveness of the mitigations in preventing weed spread were analyzed in the FEIS on pages 3.10-2 to 3.11-23. In summary, the FEIS analysis discloses the risk of weed spread from harvest and burning activities, as well as the risk of spread from no activities.

**Issue 21a. (SOILS) The FEIS has so much conflicting, inconsistent information on what units have "disturbed" soils and how much disturbance they contain, that the analysis fails to meet basic NEPA information quality standards.**

**Suggested remedy:** None given.

**Regional Review and Response:** The analysis clearly complies with National Environmental Policy Act (NEPA) and represents a hard look at the soil resource data and information. The amount of disturbance is displayed in table 3.5-2. Table 3.5-3 is an estimate based on air photos. What is unknown is the amount of detrimental soil damage because Ken McBride equated all

soil disturbances as detrimental (Discussed under Issue 14 above). The analysis in the FEIS spells out this assumption, discloses the inconsistency of this approach with Regional Standards and explains the differences in methodologies. In the end however, Ken's conservative determination of detrimental soil disturbance (again, equating all disturbance to equal detrimental disturbance) was used in the analysis and unit-specific mitigation formulation. This is clearly explained in the footnote to Table 3.5-2 on page 3.5-11 of the FEIS.

**Issue 21b. (SOILS) “The calculation of the percent of additional detrimental disturbance is not possible since detrimental disturbance is a combination of such factors as existing ground cover, soil texture, timing of operations, equipment used, skill of the equipment operator, the amount of wood to be removed, and sale administration.” (FEIS at 3.5-45, 46). The FS has no way of ever assuring the public that it can do what NFMA requires it to do – maintain soil productivity.**

**Suggested remedy:** None given.

**Regional Review and Response:** It is true a precise calculation of additional detrimental disturbance is not possible, as stated in the FEIS; however a reasoned estimate of additional risk has been provided in the summary of each soil disturbance harvest technique – summer ground-based, winter ground-based, skyline, helicopter. These numbers are also used in Table 2.5-6 and are based on the best science. This project meets the National Forest Management Act (NFMA) and maintains soil productivity.

**Issue 22. (SOILS) We object to the BNF's apparent purging of documents relied upon by the Draft EIS: “DEIS documents removed...” (FEIS at 3.5-50).**

**Suggested remedy:** Purging of documents from project file be reversed.

**Regional Review and Response:** A project file for a NEPA document is an evolving, dynamic entity, with information being added and deleted throughout the process up until the time a Record of Decision or Finding of no Significant Impact is issued. This is a standard practice to provide relevant, current data and information in the project file. The soils section of the project file is no exception to this. In preparing the FEIS, the soils section of the project file was cleaned up and edited to reflect the FEIS and focus information to the MEF Planning Area. The soil documents were tracked as to why they were removed in PF-SOIL-099.

A non-profit organization reviewed the project file and saw the documentation and disclosure that information was removed from the soils section and why it was removed (the documents were acreage figures that changed frequently or documents that were not referenced or used to support the analysis). They in-turn publicly claimed that the Forest Service “purged” information and included the concern in their objection, as this objector is also doing. As a result of this public concern, the Forest has put these documents back into the project file. However, the relevance and use of the documents is still questionable.

**Issue 23. (SOILS) The DEIS does not disclose the correlations between the ‘visual and fields samples’ with the ‘measured soil properties, leaving the accuracy of the former in**

**doubt. In response, the BNF did not disclose the requested correlations, instead further clouding the issue of reliability of the varying survey techniques.**

**Suggested remedy:** None given.

**Regional Review and Response:** Although the individual visual and field samples are not correlated, the field samples (bulk density) are used to calibrate the observer's visual measurements. For example, bulk density field measurements have a high percentage of variability due to variability in soil properties. This makes correlation with visual observations difficult. Past and many current monitoring efforts are not always based on statistical design; however this does not mean that the data is not useful, reliable, or accurate. Where the data presented is based on ocular estimates or other than statistical design, this disclosure is provided. In these cases, to the extent possible, multiple references are used to substantiate statements.

**Issue 24. (SOILS) The FEIS applies the one-size fits all 15 percent SQS.**

**Suggested remedy:** None given.

**Regional Review and Response:** The regional SQS is 15 percent.

**Issue 25. (SOILS) Our DEIS comments also asked, "Are the aerial extents of the soil productivity losses due to the problem cutslope and fillslope sites (3.5-4) estimated in the subwatershed totals?" but the BNF did not reply.**

**Suggested remedy:** None given.

**Regional Review and Response:** The FEIS document has been edited and no longer contains discussion of the broad effects from roads, outside of treatment units, on soils. It is understood that Forest System roads, including cut and fill slopes, are considered lands removed from production administratively and biologically. In addition, the Watershed discussion, Section 3.3, has a detailed discussion of the effects of roads and sediment sources.

**Issue 26. (SOILS) Our DEIS comments also stated, "Maps such as Figures 3.5.1 and 3.5.2 would be meaningful if the key was actually readable." In response, the maps were simply removed from the FEIS!**

**Suggested remedy:** None given.

**Regional Review and Response:** The map in question was found in the DEIS and not in the FEIS because discussion of the landscape level analysis was moved to the Project File. Landscape level conditions are discussed in the FEIS under Cumulative Effects. As mentioned under Issue 16 above, the objective of the Geographic Information System (GIS) landscape level analysis was to help evaluate overall watershed conditions related to soil and water. However, the information was not used as a substitute for site-specific soils analysis.

**Issue 27. (SOILS/OTHER) The FEIS simply does not disclose the estimates of acres of aerial extent of cumulative land productivity losses due to noxious weeds.**

**Suggested remedy:** None given.

**Regional Review and Response:** On pages 3.10-7 to 3.10-9, the FEIS discloses the current estimated acres of infestation on the Bitterroot National Forest for spotted knapweed, St. John's wort, sulfur cinquefoil, houndstongue, Canada thistle, oxeye daisy, whitetop, and cheatgrass.

**Issue 28. (SOILS) The FEIS fails to estimate the varying quantitative detrimental soil impacts due to the disclosed implications of all landtype and other natural productivity limitations. And the public cannot tell which proposed activity areas fall into which landtype or other natural soil productivity limitations, and therefore might be more at risk for erosion or other detrimental impacts.**

**Suggested remedy:** None given.

**Regional Review and Response:** Landtype information is provided in FEIS Table 3.5-1 with interpretation occurring on pages 3.5-3 through 3.5-5. Limitations are provided by unit in FEIS Table 3.5-1. This information is also carried forward in the discussion of effects, pages 3.5-20 to 3.5-23.

**Issue 29. (SOILS) The EIS contains contradictory information on the amount of detrimental soil disturbance to be expected with winter ground-based logging. The EIS and SQS assumes that amelioration can adequately restore soil productivity, however these assumptions have never adequately been tested on the BNF or R1.**

**Suggested remedy:** None given.

**Regional Review and Response:** Contradictory information is displayed because research provides conflicting information. As stated under Issue 21b, research data depicts varying soil conditions and sensitivities, logging methods and operator skill, weather, and landscape conditions, thus there is bound to be a range of data provided in the literature.

As stated in the FEIS, page 3.5-27, it is acknowledged that the effects of restoration is variable depending on the technique and skill at implementation, but the next paragraph goes on to explain that the actions are effective at breaking up the aerial extent and providing for increased hydrologic function. References for this statement are provided in the following paragraph; (the Forest Resources and Practices Team, 1999). Additional references are provided in PF-SOIL-091 which is referenced at the bottom of page 3.5-26.

**Issue 30. (PROCESS) As long as priorities remain designing logging projects, the lessons of the BAR Project are that restoration may never happen. The credibility of the BNF is maintained at an all-time low by the WO's refusal to fully fund BAR restoration...**

**Suggested remedy:** None given.

**Regional Review and Response:**

- From Fiscal Year 2001 through Fiscal Year 2004, the Bitterroot received approximately \$48 million for restoration funding.
- Approximately \$28 million was subsequently transferred to fund fire suppression costs in 2002 and 2003.
- The Forest has spent approximately \$19 million in active restoration through FY 2004.
- The Fiscal Year 2005 program budget office provided \$50,000 for restoration activities on the Bitterroot National Forest.
- There are 8 major restoration activities identified in the Decision/Settlement Agreement. The percentage of accomplishment varies based on funding.

<b>Restoration Activity</b>	<b>Decision/Settlement Agreement Specifics</b>	<b>Percent Accomplished</b>
Road Best Management Practices Upgrades	513 miles	19 percent complete 30 percent partially complete
Road Decommissioning	46 miles	31 percent complete
Road Storage	105 miles	19 percent complete
Fish Passage Culverts	32 culverts	44 percent complete
Fish Habitat Improvement	16 miles of stream	100 percent complete
Reforestation	33,150 acres	31 percent complete
Fuel Reduction Salvage Harvest	14,700 acres	11,252 under contract 75 percent, 63 percent completed 25 MMBF
Riparian Planting	4.5 miles	100 percent complete

- The Bitterroot National Forest continues to work within agency budget procedures to obtain additional funding to complete the remaining restoration activities.

**Issue 31. (SOILS) The FEIS does not disclose how the proposed measures are more “stringent” and would result in actual compliance.**

**Suggested remedy:** None given.

**Regional Review and Response:** This is from the Draft Environmental Impact Statement (DEIS) page 3.5-21. For the FEIS all mitigations are provided in Chapter 2 without value statements as “more stringent”. As discussed in the FEIS, page 3.5-28, mitigation effectiveness has been documented through a few studies/monitoring on the Bitterroot (including the State audit process) and Lolo National Forests.

**Issue 32. (SOILS) Our DEIS comments stated, “Monitoring following salvage logging in the BNF after the Fires of 2000 found summer skyline yarding to detrimentally disturb little of the unit. How reliable are such observations?” The FEIS did not respond to this and other requests for disclosure about the comparative reliability of varying methodologies.**

**Suggested remedy:** None given.

**Regional Review and Response:** Refer to Issue 18.

**Issue 33. (SOILS) From our DEIS comments: “The action alternatives will likely remove substantial amounts of soil nutrients but the rotations are understood to be too long...” (p. 3.5-23). That is a common fallacy, there is simply no commitment for any rotation length.**

**Suggested remedy:** None given.

**Regional Review and Response:** Rotation lengths are expected to be long due to the high mortality from the Douglas-fir bark beetle epidemic in the stands. Even without harvest, the stands will need time to re-grow.

**Issue 34. (SOILS) From our DEIS comments: “ It is therefore anticipated that no major, long-term negative effects will result from this one-time whole tree harvesting prescription. (p.3.5-24). The DEIS fails to estimate short-term negative effects or explain what is meant by long-term.”**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue was addressed within the response to public concern statement 3125. The discussions of nutrient cycling and organic matter have been expanded in the FEIS. Research indicates that the current SQS appear adequate to protect the nutrient capital.

**Issue 35. (SOILS) The meaning of “soil productivity” in the terminology of NFMA is largely ignored. The FS cannot assume there is no “significant or permanent impairment of the productivity of the land” as NFMA requires.**

**Suggested remedy:** None given.

**Regional Review and Response:** FEIS, Page 3.5-49 talks to NFMA. The National Forest Management Act requires the Forest Service to insure that timber will be harvested only where soil will not be irreversibly damaged (16 USC Section 1604 (g)(3)(E)(i)) and even-aged regeneration harvest be carried out in a manner consistent with the protection of soil (16 USC Section 1604 (g)(3)(F)(v)). Nothing in the proposed activities for either Alternative 2 or 3 will result in irreversible effects on the soil resource (PF-SOIL-088).

Identification of lands generally suitable for timber harvest and timber production is made at the land management plan level; however, these identifications are estimates that are validated at the project level [36 CFR 219.12(a)(2)(D)(ii)]. Project level suitability determinations were made during silvicultural diagnoses (PF-SILV-051); final suitability determinations on lands proposed for commercial timber harvest will be documented in a site specific silvicultural prescription prepared or reviewed by a Certified Silviculturist. Timber harvest on lands not suitable for timber production can occur when harvest is necessary or appropriate for other multiple use purposes and to achieve the desired vegetation conditions (16 USC 1604 (k), 36 CFR 219.12(a)(2)(D)(ii)).

As described in Section 1.4.1, to ensure consistency with the current Forest Plan, a site specific Forest Plan amendment is proposed to permit timber harvest on lands otherwise not suited for timber harvest to meet project objectives. This is consistent with 16 USC 1604 (k) and 36 CFR 219.12(a)(2)(D)(ii) the implementing regulations of the National Forest Management Act of 1976.

**Issue 36. (SOILS) We object to the fact that the BNF never attempted to put in place a scientifically sound definition of “soil productivity” that can be measured and compared to baseline conditions.**

**Suggested remedy:** None given.

**Regional Review and Response:** A number of variables are used to assess project effects to soil productivity (including potential for: soil erosion and mass movements, organic matter, groundcover and coarse woody residue and nutrient cycling) and soil disturbance.

**Issue 37. (WATER) It is erroneous to assume that BMPs will assure water quality will be maintained.**

**Suggested remedy:** None given.

**Regional Review and Response:** Refer to Public Concern Statement 3154, 3157, 31519, 31523. PF-WAT-44, a copy of a report from the State of Montana on a recent BMP audit on the Blodgett Stewardship Sale (a project that was implemented similar to how MEF projects would be implemented), found that the Bitterroot National Forest met or exceed the intent of applicable BMPs for Blodgett Stewardship. PF-WAT-49 is a copy of Environmental Protection Agency (EPA) correspondence in response to and support of changes between the DEIS and FEIS. In WAT-49 the EPA states that the project (the BMPs and watershed mitigation included in the FEIS) meets the intent of the Headwaters TMDL that is in the process of being finalized.

The application of BMPs are standard procedures for any harvest or fuels reduction project on National Forest System lands. Best Management Practices are the foundation of water quality standards for the State of Montana. Properly applied, BMPs limit non-point source pollution, the kind of pollution that results from land management activities. Many BMPs are incorporated as contract provisions, others are additional mitigation. Mitigation beyond BMPs specific to each project (such as Middle East Fork) are often identified. BMPs are monitored routinely by the Timber Sale Administrators and other specialists during project implementation. If they are not

effective or required conditions are not being met, operations are suspended until conditions can be met.

**Issue 38. (OG/WL) We object to the fact that the Forest Plan apparently allows further degradation of habitat for old-growth dependant wildlife species in areas not meeting the distribution standards, as implied by the FEIS.**

**Suggested remedy:** None given.

**Regional Review and Response:** The project would not reduce the amount of old growth habitat in the Middle East Fork project area. This is explained in Section 3.6.5 A of the FEIS. Public concern statements also respond to this issue: 3605 (p. 34), 33201 (p. 126), 33203 (p. 127), 36125 (p. 155), 36127 (p. 157) and 63009 (p. 172). Some members of the public have indicated that they view individual large, old, live trees and large, old, dead trees as old growth. These same trees may be a component of old growth habitat but do not constitute old growth habitat as defined in the Forest Plan or the scientific literature by themselves. Old growth habitat classification, consistent with the Forest Plan, is based on stand-wide structure and characteristics. Large snags are important to wildlife and the effects of this project on snags are presented in Section 3.6.5 B. Mature trees, that are not in old growth habitat as defined here, are important to various wildlife species as well. The proposed action is consistent with HFRA Section 102(e)(4)(A), the project meets the requirements for old growth stands by implementing the current Forest Plan direction (FEIS page 1-15) and meets the large tree retention requirements.

**Issue 39. (OG/WL) The FEIS doesn't quantify the edge effect from logging next to old growth habitat, in terms of effectiveness of old-growth species' habitat. The continued fragmentation of the Forest is a major ongoing concern. The size of blocks of interior forest that existed historically before management was initiated must be compared to the present condition.**

**Suggested remedy:** None given.

**Regional Review and Response:** The project would not fragment the landscape as clear cut patches in past management has. Treatments are designed to meet the historic range of variability and desired future condition as referenced in Public Concern 33236. Project design, along with implementation of the proposed treatments, are aimed at meeting the desired future condition. The proposed treatments are designed to alter species composition to more closely approximate historic conditions. These conditions along with mitigations are designed to leave and enhance habitats used by a variety of wildlife species. See Wildlife Section 3.6 Animal Movement, Migration and Dispersal. Analysis of how past fragmentation could have effected marten, fisher, pileated woodpecker and goshawks in the Middle East Fork has been added to the cumulative effects sections of these species in the FEIS. Please see Sections 3.6.5 E, F, and O.

**Issue 40. (OG) The FEIS does not explain how the definition of old growth used by the Forest Plan relates to the Green et al., 1992 criteria. The FEIS appears to use both definitions interchangeably.**

**Suggested remedy:** None given.

**Regional Review and Response:** In response to the objectors comments on the DEIS, and as stated in response to Public Concern 33203, this discussion and clarification was added to the FEIS on pages 3.6-6 and 3.6-7.

**Issue 41. (OG) The FS has never provided protection for designated old growth, resulting in widespread loss of snag habitat due to firewood cutting and other activities adjacent to open roads. This has never been quantified in any forest-wide analysis.**

**Suggested remedy:** None given.

**Regional Review and Response:** This is addressed on pages 3.6-97 Cumulative Effects and on pages 3.6-23 of the FEIS. *Trends and Broader Context* Analysis of the forest plan amendment. The number and distribution of snags on the Bitterroot Forest may be at a modern day all time high. The 2000 fires burned over about 307,000 acres of National Forest, creating snags on all or most of the area burned, and only about 10,000 acres have been salvage harvested. Even in the salvage harvest units, approximately as many snags as occurred in historic unburned forests were retained using snag guidelines similar to those proposed here. Monitoring has shown that snag guidelines have consistently been met (PF-WL-008). Douglas-fir bark beetles have infested over 30,000 acres of the Forest outside Wilderness, and about 20,000 acres of Wilderness lands have beetle infestations. Less than 1,000 acres of beetle killed trees have been harvested, and snags approximating historic numbers have been retained in the harvest units as well.

Snags are abundant and well distributed on over 330,000 acres of the Forest, from the 2000 fire, and across the majority of the remaining one million acres of National Forest, the majority of which, is not in the suitable land base for timber harvest. With the abundance of snags available now and snag management guidelines in place to assure a continuing supply, every indication is that snag dependent species will have sufficient snag habitat to retain viability on the Forest. See also the cumulative effects of the implementing these alternatives on some snag associated or dependent species in Sections: 3.6.5 E – marten and fisher, F – pileated woodpecker, N – flammulated owl, and O – northern goshawk, P – black-backed woodpecker. Therefore, the relatively minor effect of this proposal on snags is imperceptible and inconsequential when considered at the Forest scale.

The effects of continued firewood cutting would remove additional snags along open roads within the analysis area. This would reduce the number of potential nesting trees for black-backed and pileated woodpeckers and flammulated owls as well as potential roosting habitat for western big-eared bats. Black-backed woodpeckers would be affected to a lesser degree as they are primarily associated with moderate and high severity burns. Negligible impacts are expected due to the amount of snags within the analysis area, immediately adjacent to the analysis area and on Forest. Due to the ensuing Douglas-fir beetle epidemic, newly infested trees along with future beetle-killed trees will create more snags offsetting these negligible impacts. Proposed activities may potentially provide a small benefit by reducing fuel loading hazards and utilizing mortality following treatment under Alternative 2. Firewood cutting would provide some small

benefit by removing some fuel loading along open roads if Alternative 3 was selected. Because of the existing level of snags in the area none of the alternatives would result in cumulative effect in conjunction with firewood cutting.

**Issue 42. (OG/WL) A big problem with the FEIS's analysis for old-growth Sensitive and MIS is that the connection between areas designated for old-growth management and associated wildlife species viability is glossed over.**

**Suggested remedy:** None given.

**Regional Review and Response:** The specific effects to individual species that are associated with or dependent on old growth habitat is analyzed in Sections 3.6.5 E – for marten and fisher, F – pileated woodpecker, N – flammulated owl, O – northern goshawk. See public concern 33203.

**Issue 43. (OG/WL) The BNF has failed to cite any evidence that it's managing for old growth habitat (logging and burning) strategy will improve old growth species habitat over the short- or long-term.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Forest did not state that they will improve old growth habitat, they stated that the project will maintain old growth habitat. Green (1992, errata 2005, page 57) states that "Old growth is not necessarily 'virgin' or 'primeval'. Old growth could develop following human disturbances". On FEIS pages 3.6-14 and 3.6-15 the Forest describes the effects of the various treatments throughout the project on their effects to stands that currently do not provide old growth habitat, but potentially could in the future. In summary, treatments in Alternative 2 will not negatively affect these units' potential to, over time, develop old growth habitat characteristics, and may, in fact, help improve the species composition of the stands, and make them more resistant to stand replacing fire and insects.

**Issue 44. (OG/WL) The BNF has not monitored for the presence of old growth species in areas previously treated in a similar fashion as proposed.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Forest has not done monitoring of this nature but others have and have found the following, as referenced in the FEIS on page 3.6-12: A study conducted in British Columbia with prescriptions with similar basal area retention as prescribed in Alternative 2, found that four years after treatments, the old growth stands treated were adequate for maintaining the wildlife values monitored (Quesnel, 2002, p. iii). Additionally, a stand with old growth structure with large amounts of tree mortality was treated to accelerate regeneration and reduce fuel loads in Oregon, while intending to maintain its function as old growth. They found that the old growth stand continued to look like and to function as old growth for the species they monitored (Bull 1995, p.11).

**Issue 45. (OG/WL) There is no scientific basis for the BNF's position that maintaining old-growth as required by Forest Plan MA standards would maintain population viability of all old growth associated wildlife species.**

**Suggested remedy:** None given.

**Regional Review and Response:** Analysis of habitat for old growth associated species as well as species viability is referenced in each associated species section of the FEIS along with Forest Plan Monitoring Reports.

**Issue 46. (WL) The issue of fragmentation should have been more thoroughly considered with respect to goshawks.**

**Suggested remedy:** None given.

**Regional Review and Response:** The issue of fragmentation is addressed in the response to Public Concern 33236 and effects to goshawk habitat is addressed in Public Concern 33237. In general, fuel reduction, thinning from below, leaving the largest live healthy trees and removing dead will not create fragmentation as past patch clear cut management has. The treatments are intended to restore historic structure and composition. Analysis of how past fragmentation could have effected goshawks in the Middle East Fork was added to the cumulative effects sections in the FEIS. Please see Sections 3.6.5.O.

**Issue 47. (WL) Our DEIS comments asked, "If martin and fisher habitat needs are so similar (p. 3.6-21), why are fisher so rare on the BNF?"**

**Suggested remedy:** None given.

**Regional Review and Response:** According to the literature cited, marten and fisher habitat needs are similar, the difference or rarity of fishers is due to fisher preferring more mesic (wet) habitats. The Middle East Fork Analysis area is primarily a more xeric (dry) site mixed with some mesic habitat. The majority of fisher records come from the west side canyons of the Bitterroot mountain range as stated on pages 3.6-42 and 43 of the FEIS. According to Montana Fish, Wildlife and Parks trapping records, between three and five fisher have been trapped each year for the past eight years in the Bitterroot Valley. Current Montana Fish, Wildlife, and Parks trapping records show a total of six fishers trapped, with the most recent taken in 2003. All records are from the west side canyons, with a few exceptions north of the Rye Creek drainage, all some distance from the project area. Forest monitoring information indicates marten are present and appear to be well distributed (USFS Draft 2004, PF-WL-012) and known occupied fisher habitat is primarily on the west side of the Forest.

**Issue 48. (WL) The FEIS failed to disclose and analyze the uncertain and precarious population status of the fisher as described in Witmer, et al., 1998.**

**Suggested remedy:** None given.

**Regional Review and Response:** Witmer's work was referenced repeatedly in the FEIS. See disclosure as referenced in the wildlife section of the FEIS on pages 3.6-34 thru 43 for population and effects.

**Issue 49. (WL) The Forest Service has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black backed woodpeckers. The cumulative impacts of the BNF's ongoing fire suppression was not adequately considered.**

**Suggested remedy:** None given.

**Regional Review and Response:** Disclosure of cumulative effects and determinations for the black backed woodpecker can be found on page 3.6-82 of the FEIS. Numerous strategies to ensure viable populations of the black backed woodpeckers are included in the project design and mitigations can be found in the FEIS such as snag retention (size, distribution, and amount) maintaining areas across the Forest where harvest does not occur such as roadless areas, wilderness, wilderness study areas, and Riparian Habitat Conservation Area buffers.

**Issue 50. (WL) Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter. This scientific information was not adequately considered for the MEF FEIS.**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue is addressed in Public Concern ID 33241. The Forest explains the wide-ranging use of habitats by wolverine in Section 3.6 of the DEIS (pg. 3.6-30 of the DEIS; Section 3.6.5 L of FEIS). The commenter's reference to Lofroth's finding that wolverines use habitats as diverse as tundra and old-growth forest is not counter to what was stated in the DEIS, and adds no new information. The DEIS also stated that ungulate carrion seems to be particularly important in the winter, and wolverine movement to lower elevations during winter may be to take advantage of ungulate mortalities on winter ranges (p. 3.6-30). The Forest identified in the FEIS that even though this is not considered wolverine habitat because of roads and past management activities, individual wolverine may be displaced as proposed activities are implemented. There are no known denning sites in the analysis area. With the average wolverine home range size of 150 square miles in Montana, the project area would only constitute a portion of the home range of one wolverine. The potential displacement is considered negligible as the analysis area is not considered to be primary habitat. Therefore, no appreciable affect to viability is expected.

**Issue 51. (WL) The kinds of treatments proposed would reduce the availability of prey species for the martin.**

**Suggested remedy:** None given.

**Regional Review and Response:** See page 3.6-34 of the FEIS. Resting and denning tend to occur in structures associated with late-successional conifer forests, whereas prey can be distributed among a variety of successional stages. Because the types of forests that contain

resting and denning sites may be more limiting, these habitats are used as an evaluation criterion in this analysis.

The issue of prey species was also addressed in Public Concern 33202. The proposed treatments are designed to be lighter on the land to more closely approximate historic conditions. Squirrels are an important food source for a variety of wildlife and the red squirrel is one of the most common mammals in the state. Their range is from lower elevation montane forests of ponderosa pine and Douglas-fir, up to subalpine Engelmann spruce-subalpine fir communities (Foresman, 2001). The end result of the project will leave snags, and logs for cavity nesting, middens (caches), and available foraging for these omnivores.

Management strategies to assure marten viability are addressed in Public Concern 33242. In summary, Alternative 2 and 3 implementation may impact individual marten or their habitat, but would not likely contribute to a trend towards Federal listing or loss of viability to population or species.

**Issue 52. (OG/WL) The BNF has consistently ignored the Region's guidance document for old growth species' habitat management (USDA FS, 1990).**

**Suggested remedy:** None given.

**Regional Review and Response:** The publication Old-growth Habitats and Associated Wildlife Species in the Northern Rocky Mountains is not a Regional Standard or direction for use. The BNF monitors for the species listed in the document along with many others not listed in the document and analysis for these species is found in the wildlife section of the FEIS.

**Issue 53. (WL) The flammulated, boreal, and great grey owl are species of concern that are sensitive to logging and other management activities. The BNF provides inadequate management strategies to ensure viability.**

**Suggested remedy:** None given.

**Regional Review and Response:** The boreal owl and great grey owl are not sensitive species on the BNF. This issue is addressed for the flammulated owl in the response to Public Concern ID 33243. It states small flammulated owls are not known to currently occupy any proposed treatment units. If the treatment areas were occupied, treatments would likely temporarily displace individual owls if the activity occurred during the nesting season. Since flammulated owls are migratory, any activity occurring from September through April would not affect their distribution if the habitat remains suitable. No effect to the viability of the species is expected (see Cumulative Effects analysis). The riparian habitat conservation areas and snag guidelines would leave sufficient legacy snags as well as a sufficient number of snags that may be used for nesting in the future. Please see Section 3.6.5 N in the FEIS for additional analysis, consideration of relevant literature, and clarification of the effects of each alternative on flammulated owls.

**Issue 54. (OG) The high density of snags and defective trees within old growth (Green et al. 1992) would be substantially eliminated with the planned logging.**

**Suggested remedy:** None given.

**Regional Review and Response:** Information pertaining to this objection can be found in the FEIS Old Growth Section 3.6.5 and in the snag table 3.6-5 on page 3.6-20. The preferred alternative does not include commercial harvest in old growth habitat. Fuel reduction would thin from below. The Healthy Forests Restoration Act requires that in carrying out a fuel reduction project the structure and composition of old growth habitat stands will be fully maintained, or improved toward restoration according to the pre-fire suppression old growth conditions that were characteristic of the forest type. It also states that the large trees contributing to old growth structure will be retained (HFRA Sec. 102(e)(2)). These requirements would be met through implementation of Alternative 2.

- **Old growth habitat characteristics, where they existed before treatment, will be retained after treatment.** Mitigations to assure old growth habitat characteristics remain through treatment are listed in Chapter 2 and include: **In the treatments where old growth habitat exists no commercial harvesting will occur.** This means that the number of live trees over 21 inches, an important old growth habitat characteristic and a minimum criteria in Green (Table 3.6-1), will generally not be changed. Incidental large green trees may be removed. The number of large dead trees, another important component, will not be effected either, other than incidentals for safety or operations.
- **Douglas-fir greater than 14" diameter breast height (dbh) will be protected from scorch damage that may occur from prescribed burning.** The appropriate prescribed fire tool will be used to assure the large live tree component is not reduced to the minimum level for old growth habitat (Table 3.6-1).
- **Methylcyclohexenone (MCH) capsules may be applied within the area to repel Douglas-fir bark beetles from individual trees or small areas.** MCH is an anti-aggregation Douglas-fir beetle pheromone, which is extremely effective in preventing attacks and has been used on the Bitterroot National Forest effectively. This tool can be used on a limited basis to protect individual large live trees within small areas where it is critical to assure that live tree component remains after treatments.
- **Where deemed necessary by a Silviculturist or Wildlife Biologist, measures will be taken to protect ponderosa pine from bole and crown scorch to the extent feasible to avoid unintentional mortality.**
- **Snags will be retained as described in the snag standard (Section 1.4.1 and Section 2.5).** For habitat type groups A and B, as these stands are in, a minimum of 2-5 snags per acre would be retained. This is more than mentioned for consideration in the Forest Plan (1987) and within the range of snags by habitat types in Green et al. (Table 3.6-1). Snags are considered an associated old growth habitat characteristic, not a minimum criteria in Green's work.
- **Downed woody debris would be retained as described in the downed woody debris standard (Section 1.4.1 and Section 2.5).** For habitat type groups A and B 5 to 10 tons of downed woody debris would be retained per acre. Green found that there would be a low (0 to 20 percent) to moderate (21 to 40 percent) probability that abundant down wood would be present in these stands. Downed wood is considered an associated old growth habitat characteristic, not a minimum criterion in Green's work.

- **Stand level prescriptions by a certified silviculturist, fuels specialist, and wildlife biologist will assure old growth habitat characteristics are retained by the treatment.** This interdisciplinary, site specific prescription will assure the minimum criterion as shown in Table 3.6-1, where they exist will be retained. This includes a minimum live basal area of 60.
- **Implementation monitoring by Silviculturist or Wildlife Biologist.**

Implementation of Alternative 2 or 3 would not affect the amount of old growth habitat in the Middle East Fork analysis area.

**Issue 55. (OG) The FEIS does not cite scientific studies that validate the use of the snag “standard” as would be adopted by the Forest Plan Amendment. The FEIS does not include a cumulative effects analysis.**

**Suggested remedy:** None given.

**Regional Review and Response:** The objector's statement that the FEIS does not cite scientific studies that validate the use of the snag standard is incorrect. On page 3.6-20, Table 3.6-5 the number of snags per acre by habitat type is displayed from 4 different references and compared to the standard used for the Middle East Fork project. In addition, the FEIS cites PF-WL-004 where more information is available.

The cumulative effects analysis on snag habitat availability on the Forest is presented on pages 3.6-23 through 3.6-24, and in general states that because the number and distribution of snags may be at a modern day all time high on the Forest, the relatively minor effect of this proposal on snags is imperceptible and inconsequential when considered at the Forest Scale.

The effects of continued firewood cutting would remove additional snags along open roads within the analysis area as discussed on page 3.6-97.

**Issue 56. (WL) The FEIS does not adequately disclose the degree to which snags would be cut down for safety reasons during logging operations due to OSHA regulations.**

**Suggested remedy:** None given.

**Regional Review and Response:** This is addressed in the response to Public Concern ID 3627. Regarding potential loss of snags due to safety concerns, it would be very difficult to predict beforehand how many snags may be deemed hazardous and therefore cut down. During implementation, marking crews are instructed to designate snags to be left which pose a minimal safety risk by selecting, as much as possible, those dead trees that have broken tops, minimal lean and are recently dead. Crews are also instructed to try to select small groups of snags concentrating the risk in a small area and leaving a larger area snag free and in a safer condition.

**Issue 57. (WL) The FEIS does not cite its basis for assuming the pileated woodpeckers prefer relatively open forest stands.**

**Suggested remedy:** None given.

**Regional Review and Response:** The pileated woodpecker analysis in Section 3.6 does not use the specific language “open forest stands”, nor is there a reference to open forest and pileated woodpeckers elsewhere in the document.

**Issue 58. (WL) The degree to which pileated woodpeckers prefer larger trees/snags for nesting is not recognized by the FEIS. In fact, the amended “standard” would arbitrarily allow FS to designate any snag, regardless of size.**

**Suggested remedy:** None given.

**Regional Review and Response:** The importance of large trees and snags for pileated woodpecker nesting is discussed and appropriate literature referenced in the FEIS on pages 3.6-43 through 3.6-44. The snag standard, on page 1-13, states that “Retained snags will include representation across size classes in the unit, including the largest tree classes. These issues are also discussed in the response to ID 33245 in the FEIS. See FEIS, Section 3.6.5 F.

**Issue 59. (WL) The number of snags to be retained in logging units, and the failure to specify snags of adequate size, contrasts with scientifically-determined habitat needs acknowledged elsewhere by the FS.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Forest addressed this issue in Public Concern ID 33209. A review of the literature applicable to snags in the Middle East Fork area was completed to determine what an appropriate number of snags to leave for important wildlife habitat while meeting the fuel reduction goals. This review included the Northern Region Protocol for Snag Management (Snag Protocol Team for the USDA Forest Service Northern Region, 2000), Abundance and Characteristics of Snags in Western Montana Forests (Harris, 1999), and Old-Growth Forest Types of the Northern Region (Green et al., 2005). The Forest added, based on public comment, the information from the Intermountain Columbia Basin Ecosystem Management Project. All of this reference material is post Thomas et al. (1979) and Bull et al. (1997), an important consideration for one commenter. Details can be found in FEIS, Section 3.6.5 B.

The prescribed minimum numbers of snags in the proposed treatment units for the Middle East Fork project are within the ranges provided in the literature and meet the fuel reduction objectives. The number of snags that will need to be felled for safety reasons is unknown. However, monitoring in recent vegetation management activities indicates prescriptions for snag retention have consistently been met (PF-WL-008). The Forest included a cumulative effects analysis at the Forest scale of the proposed Forest Plan amendment for snag retention.

Before the 1980s snags were not routinely retained in harvest units. Since 1987 where harvest has occurred in the Middle East Fork analysis area, snags have been retained. The number and

distribution of snags on the Bitterroot National Forest may be at a modern day all time high due to the Douglas-fir bark beetle epidemic and the uncharacteristically large areas burned in 2000.

Additionally, the snag standard, on page 1-13 of the FEIS, states that "Retained snags will include representation across size classes in the unit, including the largest tree classes.

**Issue 60. (WL) The failure to protect enough large snag habitats also has implications for flammulated owls that the FEIS ignores.**

**Suggested remedy:** None given.

**Regional Review and Response:** The FEIS adequately discloses the effects of the project on snags and flammulated owls. This issue was addressed in the response to Public Concern ID 33243. The riparian habitat conservation areas and snag guidelines would leave sufficient legacy snags as well as a sufficient number of snags that may be used for nesting in the future. See Section 3.6.5 N in the FEIS for additional analysis, consideration of relevant literature and clarification of the effects of each alternative on flammulated owls. The effects on snag removal and the scientific basis for why sufficient number of snags will be retained for flammulated owls and other species are also disclosed on pages 3.6-21 and 3.6-22 of the FEIS.

**Issue 61. (WL) The FEIS also fails to cite the results of monitoring that indicate the FS is capable of meeting snag requirements for wildlife species.**

**Suggested remedy:** Explain the contrast between the BNF's means of providing habitat needs for the pileated woodpecker with the scientific references above.

**Regional Review and Response:** The FEIS states the results of snag monitoring several times (Pages 3.6-22, 3.6-47 and 3.6-66). Monitoring of recent vegetation management activities (Burned area recovery monitoring PF-WL-008) indicates prescriptions for snag retention have consistently been met.

**Issue 62. (WL) The FEIS provides inadequate analysis regarding the size and quality of habitat blocks needed by the pileated woodpecker, the analysis fails to disclose quantitative or qualitative significance of cumulative effects due to past logging in the area and across the forest.**

**Suggested remedy:** None given.

**Regional Review and Response:** The analysis of effects of the proposed project on pileated woodpecker on pages 3.6-43 through 3.6-50 and pages 3.6-88 through 3.6-105 of the FEIS is adequate. This includes the qualitative cumulative effects analysis of past actions, in conjunction with the proposed actions.

**Issue 63. (WL) Our comments on the DEIS inquired about the BNF's belief to the degree of accuracy of the TSMRS database and the response was simply that some of the areas**

**proposed for logging were visited. The BNF failed to disclose the reliability, accuracy, and validity of the databased-based modeling used for species viability assessments.**

**Suggested remedy:** None given.

**Regional Review and Response:** The objector's comment to the DEIS was addressed in Public Concern ID 3628. It states, "As described in Section 3.2.5 of the document, in 2004 field site visits were made to all areas proposed for treatment in Alternative 2. An aerial flight was also conducted over the entire analysis area. In addition, during the summer of 2004, over 1,200 acres of plot based statistical stand exams were conducted to quantify forest conditions in representative units proposed for treatment. This provided quantifiable stand mortality rates and provided beetle activity that was not discernable from the air. This information updated the TSMRS database which is a reasonable assessment of existing conditions. This information, along with the biologists' knowledge of the area and species requirements is a reasonable means to quantify potential and suitable wildlife habitat in the Middle East Fork area."

Additionally, on page 3.2-7 of the FEIS it states, "To establish and portray the existing condition and environmental consequences a variety of data sources were used. Information on habitat type, cover type, structural stage, origin, and stand activity history are based primarily on corporate data housed in Forest Service Oracle relational databases including the Timber Management Record System (TSMRS) and FSveg (Field Sampled Vegetation). The TSMRS ... was compiled using field records and aerial photographs, and is considered 85-95 percent accurate from the 1960s to present. TSMRS data is updated in an ongoing basis and is the most current reflection of the existing condition. Approximately 95 percent of the areas affected by the fires of 2000, within the analysis area, have been updated in the TSMRS database. In addition, multiple GIS (geographical information system) coverages and associated tabular data housed in the Bitterroot National Forest GIS library were used.

**Issue 64. (WL) The FS failed to tier the viability analysis for sensitive species that would be impacted by the project to a landscape analysis of sensitive species viability that would allow for some assurances to the public that species viability is currently insured.**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue is addressed in the response to Public Concern ID 33248. It states, "In the FEIS the geographic boundary for the cumulative effects analysis is clearly defined for each sensitive species. A determination of the impact of the proposed alternatives on each species and their viability, along with the rationale for that determination, is also displayed. Please see Sections 3.6.5 E, K, L, M, N, and P." Samson (2005) was considered along with other information.

**Issue 65. (WL) The EIS does not adequately consider cumulative effects on upland habitat for boreal toads.**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue is address in Public Concern ID 33249 where it states, "Based on public comment additional review of relevant literature and analysis was conducted for the boreal toad. Because of the importance of wet areas to boreal toads for breeding, winter hibernation and travel, the Forest focused the effects analysis on potential impacts to riparian areas. In summary it was determined that implementation of Alternative 2 or 3 may impact individual boreal toads or their habitat, but would not likely contribute to a trend towards Federal listing or loss of viability to population or species.

**Issue 66. (WL) If the Forest Plan ROD requirement for maintaining 25 percent thermal cover in elk winter range is not scientifically valid, then what is required is the NEPA and NFMA processes to change the standard, not simply ignoring it with insufficient dialog and analysis.**

**Suggested remedy:** None given.

**Regional Review and Response:** The objector's comment to the DEIS was addressed in the FEIS in part in response to Public Concern statements 10022 and 33208. Thermal cover was not ignored in the FEIS, rather it was fully discussed. The proposed Site Specific Forest Plan Amendment is found on page 1 to 13 of the FEIS and documentation of effects is found on page 3.6-30. The site-specific winter range thermal cover standard for the Middle East Fork project would read, "Existing thermal cover will be maintained within Middle East Fork treatment units to the extent it does not conflict with meeting the project's objectives." This proposed site-specific amendment recognizes and addresses the conflicting nature of the Forest Plan's fuels/fire protection goals, objective, and standards for the wildland urban interface and the overlapping winter range thermal cover standard defined on page 8 of the Forest Plan Record of Decision (1987).

The current condition of thermal cover is discussed on page 3.6-27 and the analysis of effects occurs for each alternative (pages 3.6-28, 3.6-30, and 3.6-31).

The Montana Fish, Wildlife and Parks has concurred that the proposed standard for thermal cover in the Middle East Fork area should not affect the Forest's ability to continue to meet the Forest's and State's elk objectives (FP, p. II-5) (John Vore, pers. comm., 2005, PF-WL-001).

**Issue 67. (WL) If you are going to bias the no-action alternative with noncompliance with elk requirements, please disclose the results for EHE 50 percent compliance in all third order drainages forestwide for a proper cumulative effects analysis.**

**Suggested remedy:** None given.

**Regional Review and Response:** The elk habitat effectiveness (EHE) analysis of Alternative 1 reflects the existing condition. The cumulative effects analysis area for elk is defined on page 3.6-32 of the FEIS as the eleven 3<sup>rd</sup> order drainages which are entirely or predominantly inside the Middle East Fork analysis area. This analysis area is appropriated to analyze any incremental effects from the action of this project on elk in conjunction with past, present, ongoing and reasonably foreseeable future actions. For this reason the request for analysis of EHE for all

third order drainages forest wide is outside of the scope of this analysis. The cumulative effects analysis for EHE is on page 3.6-33.

Disclosure of EHE existing condition for the Middle East Fork area is on pages 3.6-27 thru 28 and in PF-WILD-034. The FEIS states, "The Forest Plan objective for elk habitat effectiveness (EHE) is to manage open road densities to attain or maintain EHE and sufficient elk hunting opportunities. The EHE model described by Lyon (1983) was the best information available at the time. The Bitterroot Forest Plan specifies elk habitat effectiveness (EHE) standards for roaded and unroaded third order drainages. For roaded drainages, like the Middle East Fork, the standard is 50 percent EHE, or about 2 miles of road per square mile. Subsequently, a model developed by Hillis, et al. (1991) has been used in Bitterroot National Forest project planning to maintain elk security during hunting season when elk are most vulnerable. See the following elk security section for details of how this model has been used to achieve the Forest Plan objective."

"The Upper Jennings Creek drainage has an open road density of about 2.3 miles per square mile, equivalent to an elk habitat effectiveness rating of about 45 percent. The Forest Plan standard for the area is 50 percent. The area between the Kerlee Creek drainage and Meadow Creek drainage has an open road density of 2.6 miles per square mile, equivalent to an elk habitat effectiveness rating of about 42 percent. All other third order drainages in the Middle East Fork Analysis Area meet EHE standards."

**Issue 68. (SOILS /COMM) If the FS genuinely believes that 'fuels' pose such a significant problem to soils via future fire, it would seriously consider the logging slash risks (see Figure 3.1-3).**

**Suggested remedy:** None given.

**Regional Review and Response:** All proposed vegetative treatments, including commercial harvests, have a site specific plan for treating activity fuels. Logging slash treatments such as removal by yarding tops, hand piling, and prescribed fire are proposed to reduce hazardous fuels and subsequent soils effects.

See also the response to Issue 11 that discusses the trade-offs with soils and fuels. Project design and mitigations are in place to retain adequate amounts of organic material.

**Issue 69. (COMM) The DEIS does not adequately disclose the implications that thinning can result in faster fire spread than in the unthinned stand, as pointed out during our scoping comments and cited references).**

**Suggested remedy:** None given.

**Regional Review and Response:** In the FEIS, on pages 3.1-37 and 42 there is a discussion on increased rates of spread and fire size due to changing the fuel model to one with a higher component of fine fuels. However, it further explains that these changes also result in lower fire intensities and according to Finney (2000), "Even with higher faster spread rates, the benefits of

fuel management would be seen in reduced fire damage to the forest and improved controllability.

The fire effects analysis included analysis of the silvicultural treatments prescribed for each unit including the specific vegetation, habitat type and desired conditions. A relative increase in temperature and surface wind, as well as a decrease in fuel moisture is accounted for in the fire effects predictions. The focused look was provided, as documented on page 3.1-38 of the FEIS. The MEF analysis used Forest Vegetation Simulator-Fire Fuels Extention (FVS-FFE) modeling that predicted changes in micro-climate due to human and natural alterations in vegetation and the resulting fire effects where modeled with FlamMap and Farsite. Efficacious fuel treatments, including prescribed fire treatments (which are not a part of "industrial logging", the term the objector uses) are dominant in Alternative 2. Caution should be used when comparing the MEF treatments to studies that do not include post-treatment prescribed fire. The information from prescriptions describes post-treatment stand conditions and was used in the fuel models to estimate changes that might occur at the landscape level to fire behavior, condition class, fire type and rates of spread as a result of the implementation of the alternatives. This information is disclosed in Section 3.1.6.A of the FEIS.

At the University of Montana's Lubrecht Forest, an ongoing study is researching the effects of silvicultural prescriptions and how they can imitate some of fire's effect on the landscape. The website for the Fire Surrogate study is:

<http://www.forestry.umt.edu/research/MFCES/programs/FFSL/FFSPage/Products.html>

**Issue 70. (WL) The FEIS fails to adequately disclose the cumulative impacts of increasing motorized recreational use on wildlife species.**

**Suggested remedy:** None given.

**Regional Review and Response:** This issue is adequately addressed in the response to Public Concern ID 33250 and on pages 3.6-103 and 104 of the FEIS.

**Issue 71. (PROCESS) The FEIS does not disclose the names of all other past logging projects whose analysis areas encompass the areas to be logged with this proposal. Please disclose if the FS has performed and reported all monitoring and mitigation required or recommended in any NEPA documents and the results of the monitoring.**

**Suggested remedy:** None given.

**Regional Review and Response:** Appendix B (in Volume 2 of the FEIS) show the names and locations of past, present, and reasonably foreseeable future projects. The cumulative effects of those activities are considered, as appropriate, in Chapter 3. Applicable past monitoring, not only within the analysis area but on the Forest, and effectiveness of mitigation measures are discussed throughout Chapter 4. Just for a few examples see pages 3.3-6, 3.3-7, 3.3-8, 3.4-4, 3.4-10, 3.4-25, 3.5-13, 3.5-21, 3.6-22, 3.6-26, 3.6-42, 3.11-8. Also, in Appendix C there is an effectiveness of mitigation section for each resource.

**Issue 72. (PROCESS) The FEIS does not disclose the differential effects of all previous projects on all resource areas of concern.**

**Suggested remedy:** None given.

**Regional Review and Response:** The Forest has provided an extensive catalogue and analysis of effects of previous projects on each resource area in the FEIS, commensurate with the scope of the proposal (Volume 2, Appendix B, page B-1). Cumulative Effects analysis occur in each resource section.

**Issue 73. (PROCESS) It is necessary to know if all aspects of previous project purpose and need statements were met, and if not, why. Were the many assumptions and predictions of resource impacts accurate? Did these past projects lead to the current proposal's stated purpose and need?**

**Suggested remedy:** None given.

**Regional Review and Response:** The existing conditions, including the risk from severe fire to the Middle East Fork Community and the extensive mortality due to the Douglas-fir bark beetle epidemic, lead to the current proposal's purpose and need. To the extent past actions, including fire suppression, contributed to those conditions, they contributed to the current purpose and need. As discussed in the response to Issue 72, monitoring of past projects is incorporated in the analysis of alternatives in Chapter 3, as appropriate. The level of detail and discussion related to past actions in the FEIS is adequate.

**Issue 74. (OTHER) The economics analysis fails to be consistent with NFMA and Forest Plan requirements.**

**Suggested remedy:** None given.

**Regional Review and Response:** This objection was answered in the response to Public Concern #73001.

**Issue 75. (OTHER) The FEIS does not show a map of inventoried and uninventoried roadless lands. The analysis fails to result in the necessary disclosures of cumulative impacts to the extent of roadless lands that are potentially eligible for wilderness designation.**

**Suggested remedy:** None given.

**Regional Review and Response:** This objection was answered in the response to Public Concern #53002.

**Issue 76. (WATER) The FEIS fails to demonstrate that the RMOs would not be retarded by Alternative 2.**

**Suggested remedy:** None given.

**Regional Review and Response:** The FEIS adequately demonstrates that the riparian management objectives would be protected with the preferred alternative. This objection was answered in the response to Public Concern #3339. The reasons that the Riparian Management Objectives (RMOs) would be adequately protected by Alternative 2 are summarized at the bottom of page 27 in FEIS volume 2. The reasons that the RMOs would be adequately protected are discussed in much greater detail on the following pages in the FEIS:

- Sedimentation (sediment RMO) - pages 3.4-23 to 3.4-29
- Water temperatures (water temperature RMO) – page 3.4-29
- Habitat complexity & stability (bankfull width/depth ratio and pool frequency RMOs) – page 3.4-30
- Woody debris recruitment (woody debris frequency RMO) – page 3.4-30

**Issue 77. (WATER/ SOILS) The FS is misplacing the threats to clean water onto vegetative conditions, leading to speculative soil damage and other risks instead of correctly identifying the true threats to ecosystem health.**

**Suggested remedy:** None given.

**Regional Review and Response:** The decision to focus on vegetation management with this project was made early in the planning process. Part of the Purpose and Need of this project is to restore fire adapted ecosystems within the project area. The effectiveness of vegetation management to emulate wildfire was studied in “Does forest harvest emulate fire disturbance? A comparison of effects on selected attributes in coniferous-dominated headwater systems” (Nitschke, 2005) and supports the conclusion that partial/selective harvest prescriptions combined with prescribed burning does emulate fire in headwater systems.

In response to public comments after the DEIS, additional mitigation was identified to reduce or mitigate the effects of proposed management activity and to restore watershed conditions within the analysis area. This is discussed in more detail in the Response to Issue 8 in this objection.

Also, much more analysis occurred to determine the watershed effects of proposed vegetation management activities than that of possible wildfire. Refer to the discussion analysis findings found on pages 3.3-26 through 43 vs. the discussion found on 3.3-26 devoted to wildfire effects.

**Issue 78. (PROCESS) The FEIS is unable to present a credible cumulative effects analysis because of the neglect of monitoring responsibilities of the Forest Plan and NFMA regulations.**

**Suggested remedy:** None given.

**Regional Review and Response:** Adequate cumulative effects analysis and the results of past monitoring are presented throughout Chapter 3 of the FEIS.