

## APPENDIX D

# EAST FORK FIRE SALVAGE EIS RESPONSE TO PUBLIC COMMENTS

## Purpose and Need

### Public Concern # 1:

Instead of gearing the DEIS toward the primary goals of forest recovery, biodiversity, and watershed health, the Forest Service has chosen as a purpose “working with local communities,” such that one could argue that the preferred alternative meets that purpose. While “working with local communities” is a good implementation policy, as well as an administration question, it does not constitute a purpose or need in the context of the Forest Service’s primary mission of managing the land in a way that provides multiple benefits from multiple resources. (Individual, Las Cruces, NM - #5)

### Public Concern # 2:

As is typical in a Forest Service DEIS, the range of alternatives was developed specifically to meet one desire. That desire should have been the best way to restore that land after the East Fork Fire, but instead was a timber sale. The alternatives were then designed to make the timber sale seem like the best environmental option, in this case by including restoration work that really has nothing to do with the timber sale. (Individual, Sandy, Ut - #6)

### Public Concern # 3:

We remain deeply concerned the DEIS failed to capture the context of our scoping comments and continues to define purpose and need so tightly that many public comments become superfluous. They suggested a direction that would have resolved the problem by constraining the purpose and need to the broad context required in the Forest Plan - ecosystem management and the goals of protecting watershed health and biodiversity, while meeting various local community concerns. (Preservation/Conservation Organization, Hyrum, Ut - #15)

### Forest Response to Public Concerns 1, 2, and 3:

Under (40 CFR 1502.13 Purpose and Need): “The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” The proposed action was developed in large part in response to Forest Plan Goal #10 (See FEIS Figure 1.1.1). The underlying purpose and need is to provide timber for commercial harvest and to capture economic value of timber killed by the East Fork Fire consistent with goals for watershed health, sustainable ecosystems, biodiversity and viability and scenic/recreation opportunities. Other management activities are needed to improve vegetation, watershed conditions and public access and are included in the proposed action if they are feasible and practical in conjunction with a timber sale. Additional work such as log culvert replacement and road closure (DEIS 1.1 on page 1-2) that could not be accomplished under BAER has been identified to implement under the proposed action. Some revisions have been made in Chapter 1, Purpose and Need to make this more apparent.

### Public Concern # 4:

The timber sale is also promoted as the solution to other problems caused by the fire that it will not solve. The sale has nothing to do with trees falling on roads and trails, or with the potential for fuel-wood collectors to trash riparian areas and drive off-road. Those are effects of the fire that have to be dealt with or ignored regardless of a timber sale. Ch. 1, p. 4 states that there is a desire to “minimize known hazards in areas where concentrated public use would occur”, but the sale is not designed to remove problem trees from near roadways and dispersed campgrounds. In fact, the need to build roads to some of the sale units indicates that these are areas where concentrated public use does NOT occur. (Individual, Sandy, Ut - #6)

**Public Concern # 5:**

We are a bit baffled at the importance the DEIS offers issues of public safety. We are sure there is no reliable evidence that areas within the fire perimeter pose any greater risk than any other area on the north slope and a number of cutting units are a meaningful distance from roads. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 6:**

The greatest public safety risk from hazard trees would be along designated roads, trails and recreation / camping areas. However, study of the cutting unit locations on the included map indicates that the cutting units in both action alternatives do not abut high concentration recreation areas, nor do they consistently follow roads or recreational trails. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response to Public Concerns #4 through #6:**

The East Fork Bear Road #059 has some of the heaviest use on the Evanston Ranger District. Unit 2 under both action alternatives would address some of the hazard from falling trees on this road. Other units along roads in Mill Creek would address some of the hazard along these roads. It is expected that firewood cutting will remove most of the remaining hazard trees. Firewood cutting will be regulated under terms of the permit to prevent damage to natural resources. Although felling of hazard trees could be funded separately, use of the timber sale contract and firewood cutting is more economically efficient where it is feasible. The interdisciplinary team did not intend for this issue to have a great amount of importance. It was included as a secondary purpose for the proposed action. Language in FEIS 1.3 has been changed to more clearly reflect the relative importance related to this portion of the proposed action.

**Public Concern # 7:**

While technically allowed in the revised forest plan, harvesting of this salvage sale(s) occurs not on a single acre of rigorously defined suitable timber land. The DEIS states that "Approximately 55% of the area is in MPCs...that include an expectation for timber production...". Non-suited lands and the MPCs involved in this DEIS have no expectation of timber production. We have been assured by the Forest Service that timber sales on unsuited timber lands would be rare. There is no reason to have non-suitable timber lands if harvesting occurs regularly on those landscapes, or in the alternative, there is no reason for a suitable timber base since the forest will harvest where it wants regardless of analysis and intent. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

It is true that none of the acres affected by the fire are considered suitable lands. However, this does not preclude harvesting on those lands. Suitable lands are those which have a primary objective of producing wood products on a regulated basis, and volume resulting from those lands comprises the allowable sale quantity (ASQ). Volume may be produced from other MPCs that allow harvest, but that volume is not produced on a regulated basis, is in addition to the ASQ and, with the ASQ, contributes to the total sale program quantity (TSPQ). All proposed harvest units are within MPCs that allow harvest. Forest Plan modeling of timber outputs did include volume from non-suited lands, as discussed in the Forest Plan FEIS pages 3-332 to 3-346, Appendix B, p. B1-15, and displayed in Tables TM-2 and TM-3.

**Public Concern # 8:**

We are concerned that the DEIS inappropriately distorts the emerging scientific consensus on fire ecology and misuses scientific literature by applying inappropriate citations. The end result of this manipulation of the scientific literature is the presentation of an incorrectly supported case that commercial harvest of this lodgepole and Engelmann spruce, conducted 3 to 5+ years after the stand replacement event, is needed to guarantee effective restoration of a damaged ecosystem. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

There is no attempt to indicate that harvest is needed to restore the ecosystem. The purpose of the harvest is to recover economic value of the timber. That removing of timber may reduce the intensity of future wildfires is another, but much less important purpose of the project. It is apparent that the way the purpose and need was presented lead many readers to conclude that restoration was a major purpose of the project, which is not the case. Restoration activities proposed are primarily correcting problems with roads (culvert replacement, elimination of a ford, etc.) We have clarified this in the FEIS.

## Consideration of Alternatives

**Public Concern # 9:**

I am in favor of removing the most woods products that can be done reasonably. The unit locations appear logical and the analysis of effects from erosion and sediment look accurate and consistent with my observations of effects of loggers working for me on private land adjacent to the proposed treatment units. (Forest Products Industry Representative - #2)

**Public Concern # 10:**

The DEIS states this proposal will further fragment wildlife habitat. As the consequences of this plan far outweigh the benefits it only seems logical to call it off. I encourage this plans elimination or at the least the selection of the no roads alternative. (Individual, No Address - #3)

**Public Concern # 11:**

The literature is replete with studies indicating that roads severely disturb and fragment wildlife habitats. Alternative #2 is not a good way to go because of its new roading plans. From reading the "Public Issues" squares in the DEIS Summary document, it seems the majority of the public "concerns" address the negative impacts of this project, which mostly center around new road construction. I urge you to reconsider your selection of Alternative #2 as the Forest Service's Preferred Alternative, and instead go with Alternative #3. I personally think this is a great compromise for the logging industry. (Individual, Salt Lake City, Ut - #4)

**Public Concern # 12:**

Please take a hard look at the analysis you've done and make proper, sound scientific judgements. Think ecosystem - fires like this are not unusual for this forest....they are in fact part of this forest. The only way this fire can be a problem is if the Forest Service then creates a problem by skewing these natural cycles into things unnatural, like roads and chainsaws and trucks. (Individual, Forest Lake, Mn - #9)

**Public Concern # 13:**

This should not be a done deal, this fire did not burn so much that it should all be logged. (Individual, Park City, Ut - #10)

**Public Concern # 14:**

Construction of "temporary" roads will result in long term permanent disruption of wildlife habitat and fracturing of contiguous lands required for species to exist in a healthy manner. No roads of any kind should be built in this area. Erosion resulting from roads will degrade water quality and top soil depletion that will cost more than the value of timber harvested. (Individual, Park City, Ut - #11)

**Public Concern # 15:**

Proposed logging of dead and live timber should not be allowed. The natural processes of fire, insects, decay and regeneration should be allowed to proceed without human interference. (Individual, Park City, Ut - #11)

**Public Concern # 16:**

With respect to lynx, simply removing the acres of low intensity burn that are proposed for harvest (279 a., Alt 2; 229 a., Alt. 3) and that are important habitat for lynx makes profound ecological sense and is consistent with the best available data. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 17:**

The Forest Service should take no action that would further degrade the roadless qualities of the lands we have left. (Individual, Las Cruces, NM - #5)

**Forest Response Public Concerns #9 through #17:**

Thank you for your comments. Effects of the alternatives on forest products, fragmentation of habitat, fire processes, erosion, insects, decay, regeneration, and lynx habitat have been analyzed and disclosed. After reviewing public comments, the Deciding Official will weigh the benefits and consequences of all of the alternatives in making the Decision to select or modify an alternative.

**Public Concern # 18:**

Ground based logging equipment should not be utilized in this post-fire area, especially in areas which experience severe burns. As mentioned in the DEIS burned soils are highly susceptible to disturbance and degradation, including erosion and compaction. Consisting primarily of skidding on frozen ground and dry periods we do not believe that, when implemented during the specified operating season, the listed mitigation measures and design criteria for ground based skidding would guarantee that the soils would not be substantially degraded. We ask that this analysis rigorously consider the benefits of helicopter-based skidding/yarding. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Wasatch-Cache National Forest has considered helicopter logging on other sites with higher value timber in the past and concluded it was not economically feasible. Helicopters are not very efficient at high elevations (9,000 - 10,000') and timber values of fire killed trees with relatively small average diameters are not high enough to offset the costs of helicopter logging and other needed work at this elevation.

**Public Concern # 19:**

An alternative to solve problems directly related to the fire but not including a timber sale should have been included. This would have included revegetation if required, control of noxious weeds on burned areas or areas disturbed by equipment and fire fighters, replacing culverts that are undersized only because of the fire, etc. The massive road reconstruction proposed should probably be a separate project with a separate environmental analysis. (Individual, Sandy, Ut - #6)

**Forest Response:**

The proposed action for a timber salvage sale is based on a primary purpose and need to provide wood products. Much of the reseeded, control of noxious weeds soil disturbance from fire suppression and replacing failed culverts was accomplished by the Burned Area Rehabilitation Plan (BAER). Additional work including adding new culverts, replacing old log culverts, improving drainage, and road decommissioning could not be funded under BAER, but can be funded under the timber salvage sale. The term reconstruction is misleading to many people. It has been removed from the FEIS and replaced with maintenance and improvement of drainage on about 23 miles of existing roads. This work involves blading, shaping, installation of drain dips and ditch relief culverts, and replacing log culverts or undersized or improperly positioned culverts.

**Public Concern # 20:**

This project will impact soil, water, wildlife, plant and recreation resources. May I suggest that this project area be managed as a Habitat Reserve to obliterate roads and eliminate vehicles, to save all old growth, and to fully preserve all roadless areas. (Individual, Minneapolis, Mn - 13)

**Forest Response:**

Thank you for your comment. Decisions to recommend National Forest Land for special management areas such as research natural areas or wilderness are made during the Forest Planning Process. It is not appropriate to make these decisions based on project analysis.

**Public Concern # 21:**

We do not believe that the current range of alternatives (with two action alternatives) represents the full spectrum of alternatives that the CEQ regulations demand. The UEC believes that more creative alternatives exist that address both the 'restoration and recovery of the land' and the 'working with people and communities' aspects of the purpose and need. In response to this concern, the UEC requests that the Forest include the additional two alternatives for full consideration and analysis in this EIS: First additional alternative: Dramatically expand the road closure/restoration/improvement aspect of the project with an increased concentration on improvements of the infrastructure in the area. The increased spending on this restoration work will provide jobs using equipment similar to what would be needed to implement the two current action alternatives. A focus of this alternative would be the maintenance/improvement of secure big game and carnivore habitat, with absolutely no reduction in suitable lynx habitat and lynx denning habitat. This alternative would satisfy both the 'working with people and communities' and the 'restoration and recovery of the land' components of the purpose and need. Where mechanical treatment of the forest vegetation is actually needed for ecological restoration, implement only noncommercial methods. Total timber volume output is 0 MMBF. Second additional alternative: The same as number 1 above, but where mechanical treatment of the forest vegetation is actually needed for ecological restoration, implement a combination of noncommercial methods in conjunction with commercial methods that produce no more than 1 MMBF. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Thank you for your thoughts on alternative treatments. The first alternative suggestion would not contribute to meeting Forest Plan Goal #10 and a primary part of the stated purpose and need for this project to utilize burned timber and recover economic values (FEIS 1.3). The Mountain View and Evanston District Travel Plan examined all of the existing roads on the District and in a Decision dated January 2003 determined which roads should be open for public access to National Forest lands and the environmental effects of those roads. The interdisciplinary team reviewed roads within the East Fork Fire Salvage analysis area again and identified an additional road (#80299) that should be closed for resource protection (FEIS 1.2). The existing road density and effects of the proposed action have been analyzed and the U.S. Fish and Wildlife Service has issued a Biological Opinion that the East Fork Fire Salvage project is not likely to jeopardize the continued existence of the Canada lynx. Your second alternative suggestion is similar except that it would allow utilization of up to 1 MMBF of burned timber. It would contribute to the purpose and need for this project to utilize burned timber and recover economic values at a reduced level. The analysis of effects in FEIS Chapter IV does not indicate a need to reduce volumes or acres of timber salvage.

**Public Concern # 22:**

Alternative #1 is consistently listed as the alternative of no action mandated by NEPA. However, it does involve an action component because it is a proposal to create a 100 acre spruce plantation. Why has an action been included in the alternative of no action, and does the Forest see any conflicts with the regulations implementing NEPA in doing this? (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

We anticipate a need to plant spruce seedlings in pockets scattered throughout portions of the burn area to ensure future spruce seed sources in some areas. Monitoring is likely to affirm this need. We expect to need to do the planting at some point, regardless of whether or not one of the action alternatives is selected for the East Fork Fire Salvage. However, the spruce planting should not have been included under the "No Action" alternative and has been removed in the FEIS.

**Public Concern # 23:**

Since I doubt the Forest Service will listen to my suggestion to accept Alternative 1 as the preferred alternative, I include some restrictions that should be included in a timber sale:

- No new roads, permanent or temporary.
- No logging in riparian areas or within 200 feet of waterways.
- No logging on slopes greater than 30 degrees.
- No whitewashing the timber sale by including it with other erosion control measures. Separate these issues and be honest about the environmental and economic effects of a timber sale.

(Individual, Sandy, Ut - #6)

**Forest Response:**

Alternative 3 has no road construction. There would be no logging in riparian areas. In some specific situations, with review by appropriate specialists, timber would be salvaged from portions of RHCA's. Live and dead trees that may provide woody debris recruitment to perennial stream channels would be retained and no skidding would be allowed on land within the RHCA that drains directly into a stream channel. Skidding operations are limited to slopes under 40% (approximately 22 degrees). The purpose of a timber sale is to provide wood products. However, there is beneficial work that can be done in conjunction with the timber sale either more efficiently or more economically.

**Public Concern # 24:**

Temporary roads impact wildlife habitat as significantly as permanent ones. Five miles of new roads plus 22 miles of "reconstructed" roads (whatever the latter means) will crisscross forests that serve much higher purposes than getting out a few logs of disputable quality. Wildlife habitat will be unaffected if the forest is left alone and insect damage will not be improved through logging. That is what the document states. What more positive indicators do you need NOT TO LOG the East Fork? Certainly erosion problems can be handled without logging or road building. (Individual, Hyrum, Ut - #7)

**Forest Response:**

A primary purpose and need for the proposed project is to provide timber for commercial harvest and to capture the economic value of timber killed by the east Fork Fire. There are secondary benefits that can be accomplished with a timber sale contract. See FEIS 1.3 and Forest Responses to Public Concerns #2 and #8.

## **Soil and Water**

**Public Concern # 25:**

The sedimentation effects of road construction through a post-fire landscape are strongly cumulative, and will further impede recovery of the land and the watershed. This element of the project proposal must be dropped, as it inflicts far more environmental damage than any environmental gain to be realized by any other element of the proposed action. The impacts of the proposed reconstruction of 22.6 miles of existing roads would be similar, as it would cause fresh breaking of the ground and bleed yet more silt down the watershed. The fact that these roads are classified as "temporary" does not change their short-term impact, nor is there any assurance that the roads would actually be reclaimed. The Forest Service has a very poor record of allowing "temporary" roads remain indefinitely, often letting them become new ORV corridors. (Individual, Las Cruces, NM - #5)

**Forest Response:**

The cumulative nature of effects of road construction and reconstruction to the erosion/sedimentation effects from the 2002 East Fork Fire were analyzed and disclosed in DEIS section 4.1.3.4. Because of the extensive required mitigation practices for the proposed action detailed in DEIS table 2.4.1 and sections 2.2.2 and 2.3.4, the proposed timber harvest would not be expected to increase erosion and sedimentation in the analysis area. The proposal for temporary roads (DEIS Section 2.3.4) is to close and extensively reclaim the road prisms to all future use immediately following the completion of harvest activities. This is a required component of the design for Alternative 2 in the FEIS. There is no proposal to leave any temporary road open as an ORV corridor. Also see response to Public Concern #73.

**Public Concern # 26:**

The effects of logging must include the environmental effects from carbon, sulfur, other emissions, and chemical spills related to heavy machinery operating in the forest. (Individual, Sandy, Ut - #6)

**Forest Response:**

These issues were eliminated from further study as described in Section 2.1.4. Because of the small scale of the emissions associated with equipment used in the proposed action, we do not feel that analysis of the effects described in your comment warrant consideration in the FEIS. Your concern about chemical spills is addressed in the DEIS (section 2.2.1) by existing policy (Revised WCNF Forest Plan Standard S2 and S4) that recognizes Best Management Practices as an effective method of minimizing this sort of potential water quality degradation.

**Public Concern # 27:**

Chapters 3 and 4 describe and analyze conditions where some action-induced sediment will reach surface water, a violation of S2.” (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The watershed health guidance sources listed in Appendix II of the WCNF Revised Forest Plan contain information about management practices that would prevent or reduce pollution to provide a means to protect and improve the quality of water resources and maintain their beneficial uses. The intent of the Revised Forest Plan Standard S2 is not to prevent all sediment from reaching a surface or ground water body, but to prevent pollution from reaching a water body where that pollution would impair the beneficial use of that water body. The proposed action and alternatives have mitigation measures that would minimize sediment to the point where there would be no increase in sedimentation from existing conditions. See FEIS Sections 4.1.2 and 4.1.3.

**Public Concern # 28:**

This analysis does not provide for differences between environmental and economic effects of the timber sale and road and trail reconstruction. Saying that Alternative 1 would have the “potential for delivering the most sediment to channels” (p. 2-31) implies that logging actually reduces sediment. The road reconstruction may reduce sediment, the logging probably increases sediment. The concern on p. 2-6 that the “positive effects of erosion control on fish will not be accomplished without timber salvage” is a concern only because the Forest Service has falsely linked these issues. (Individual, Sandy, Ut - #6)

**Forest Response:**

The statement of concern on page 2-6 was raised by the public and addressed as a public issue. There are improvements in drainage and road decommissioning that would be made under the timber sale contract and would reduce sediment sources to stream channels. These actions are included in the Proposed Action because they are connected actions that are ripe for a Decision. See FEIS 1.2. Please also refer to response to Public Concern #29.

**Public Concern # 29:**

None of the soil and water concerns on p. 2-29 and 2-30 are addressed by logging. The concerns are about problems that were created by the fire, that won't be fixed by logging, and that may be exacerbated by logging. The concern that "hydrophobic soil conditions and reforestation would not be improved without salvage logging and the associated reseeded, water bars, and other methods of holding the soil in place" is disingenuous. Erosion control could be done without logging. (Individual, Sandy, Ut - #6)

**Forest Response:**

We agree that the concerns listed in DEIS section 2.7.4 are a result of the 2002 East Fork Fire. The DEIS (section 4.1) analysis of soil and water effects makes few assertions that the action alternatives would fix these conditions, and the conclusions are not dependent upon that being the case. DEIS section 2.3.2 discloses that some logging related proposed actions would address resource problems that existed prior to the 2002 fire. Your comment assumes that soil erosion rates, and by extension sediment yields, from proposed action activities would create greater detrimental soil and water quality effects than the no action alternative. The analysis in the DEIS, however, does not support that assumption. DEIS Tables 4.1.10 and 4.1.11 disclose that for both low and high probability storm events, soil erosion rates for the majority of treatment units in the proposed actions are the same or slightly lower than the rates for the no action alternative. The public raised the specific issue you mention in your comment during the scoping process. The DEIS (section 4.1.2.2) states that "Erosion would not be mitigated by increased woody debris from logging slash or disruption of hydrophobic soil conditions from tree felling and log skidding" under the "No Action" alternative. Although this is a true statement, it is misleading because analysis of the action alternatives does not include a reduction in soil hydrophobicity. It is also inappropriate to include a statement of what would not be done under the "No Action" alternative. We have removed the text related to hydrophobicity under the "No Action" alternative in Section 4.1.2.2 in the FEIS. Finally, we agree that erosion control could be done without logging, and in fact a number of sediment control projects that were economically justified and feasible and considered to be necessary emergency measures were implemented as part of the post fire rehabilitation process.

**Public Concern # 30:**

The DEIS needs to be much more specific as to the mitigation methods used to control erosion. (Individual, Salt Lake City, Ut - #8)

**Forest Response:**

The FEIS (sections 2.2.2, 4.1.2.3, 4.1.2.4, and Table 2.4.1) discloses the kinds of erosion control practices that are necessary and required in the design of the action alternatives.

**Public Concern # 31:**

The DEIS also describes that if erosion is an issue, neither logging nor road building would help the problem, and of course would increase the problem. Further "mitigation" would obviously be a costly effort to stem the problem accelerated by the proposed action. (Individual, Forest Lake, Mn - #9)

**Forest Response:**

Your comment assumes that soil erosion following the 2002 East Fork Fire would have detrimental effects on soil quality, and that proposed action activities would create additional detrimental soil effects. The analysis in the FEIS, however, does not support that assumption. FEIS sections 4.1, 4.2, and Table 4.1.10 all indicate that for the most probable kind of rain storms, soil erosion rates for the majority of the activity area would be within tolerance values for every alternative analyzed. FEIS Table 4.1.10 also discloses that in most salvage units, soil erosion rates for the proposed actions are the same or slightly lower than the rates for the no action alternative.

**Public Concern # 32:**

The Forest Service must assure all potential erosion problems are immediately addressed and resolved. (Individual, Sandy, Ut - #12)

**Forest Response:**

The DEIS (Section 4.1.2) addresses site specific potential erosion problems in terms of exceedance of soil loss tolerance values. The DEIS (sections 4.1.2.3 and 4.1.2.4 and Table 4.1.1.10) discloses specific proposed treatment units where the most probable storm event would result in erosion that exceeds those values. The DEIS (section 2.2.2 and Table 2.4.1) then site specifically resolves potential erosion problems by disclosing required mitigation measures.

**Public Concern # 33:**

The gist of the DEIS with respect to soils is, in fact, that soil erosion and thus water quality reduction will be greater in the two action alternatives because of inherent concern over a 50 year storm event and additional short-term loss of soil integrity due to road building and logging activity. Correctly, over and over again, the literature review in Chapter 3 notes silvicultural activities enhance and increase soil erosion and decrease productivity and over and over again the analysis simply dismisses these findings attempting to hide the problems of soil erosion and productivity behind unproven mitigation promises. This DEIS violates the arbitrary and capricious test in that data is ignored and/or used inappropriately to justify an action that increases erosion/sedimentation. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

Your comment concludes that soil erosion rates, and by extension sediment yields, from proposed action activities would create greater detrimental soil and water quality effects than the no action alternative. The analysis in the FEIS, however, does not support that conclusion. DEIS Tables 4.1.10 and 4.1.11 derived from the WEPP model disclose that for both low and high probability storm events, soil erosion rates for the majority of treatment units in the proposed actions are the same or slightly lower than the rates for the no action alternative. DEIS sections 4.1.2.3 and 4.1.2.4 disclose that erosion rates associated with road building would be higher than for the no action alternative. These same sections concluded that these effects would be limited in both time and extent, and consequently would not exceed Forest Plan guidelines for protecting long term soil quality. Our literature review on the effects of silvicultural activities on soil and water quality can be found in DEIS section 4.1.1, not in Section 3 as you note; it contains a discussion of the potential effects of road building and logging activities and the ability of proven practices to mitigate them.

**Public Concern # 34:**

McIver and Starr (McIver, James D. and Lynn Starr. 2000. Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. PNW-GTR-486) note: "We know enough about both logging activity and structural change to recommend caution. Although ground-based logging activity could mitigate for erosion problems under certain conditions, it is more likely that it will either have no effect or produce more sediment than that produced by the fire. More importantly, we do not know how site-specific effects accumulate over watersheds, and this knowledge is essential if forest management is to be linked to aquatic integrity..." The point is clear---in the "Affected Environment" section the DEIS presents significant data suggesting impacts from this post fire logging operation are notable yet disconnects when "analyzing" the impacts. There is not a singular rationale to proceed with the sale--there is a plethora of the best and available evidence that it should not go forward. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

DEIS section 4.1 and Tables 4.1.1.10 and 4.1.1.11 disclose the results of site specific erosion and sediment modeling for all of the alternatives, and conclude that in general the proposed logging activities would result in erosion rates that are either similar or slightly less than the no action alternative. DEIS sections 4.1, 4.2, and Table 4.1.10 also indicate that for the most probable kind of rain storms, soil erosion rates for the majority of the activity area would be within tolerance values for every alternative analyzed, and consequently would not exceed Forest Plan guidelines for protecting long term soil quality.

**Public Concern # 35:**

The soils technical report for this project assumes that compactions, puddling, and other detrimental soil disturbance will not result in a net increase when compared to the no action alternatives because the harvest will be constrained to dry or frozen ground. We are concerned that this assumption may be unfounded. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

DEIS section 4.1.2 defines soil compaction and rutting as most likely to occur on soils that range from moist to very wet, and that have medium to clayey textures. Both the soils technical report and DEIS sections 4.1.2.3 and 4.1.2.4 disclosed the specific treatment units that contained susceptible soil types. Restriction of activities to dry or frozen soil conditions is a Best Management Practice that has been analyzed and proven to minimize compaction and rutting as part of the Forest Plan Revision process. Text and references will be added to the FEIS Section 4.1.2.3 to clarify the required mitigation practices.

**Public Concern # 36:**

The DEIS describes the proposed action as not involving commercial harvest and temporary road construction on unstable slopes. However, cutting unit #24, which involves construction of temporary road, is located on top of a large earth flow that may be active. While stand structure seems to indicate that movement of this earth flow may have been relatively slow in recent decades, the Forest has not adequately addressed the possibility that the activity in this flow may increase dramatically as a result of increased instability caused by the wildfire, let along the proposed logging, ground based skidding, and road construction and restoration activities. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The FEIS includes requirements in the RHCA's in Section 2.2.1 "No harvesting on landslide prone areas unless agreed to by the Forest Hydrologist and Fisheries Biologist". Forest Plan Guideline G9 in Figure 3.4.1 on page 3-7 states: "Soil disturbing activities on steep, erosive, and unstable slopes and in wetlands, floodplains and wet meadows are to be avoided". The proposed action would involve temporary road construction in cutting unit #24, which is known to include areas of unstable slopes. The soils specialist report (section 4.7) and DEIS (section 4.1.2.3) contain discussions on the geologic hazards associated with proposed harvest unit 24, as well as a reference to written consultation done on this unit by a Forest Service research geomorphologist. The greatest concern with the proposed actions involved the effects of road construction where large cut or fill slopes might destabilize small localized portions of the landslide. Required mitigation to minimize these effects was disclosed in this same section of the DEIS, and was added to Table 2.4.1 in the FEIS.

**Public Concern # 37:**

We find the cumulative effects and other analysis to impacts to soils to be inconsistent with the available data and components of the proposed action. We also do not think that the DEIS adequately addresses consistent USFS findings that for interior forests, the mosaic patterns and residual woody debris that wildfire such as the 2002 fire produce consistently have fewer implications for loss of soil productivity and function than additional disturbance from commercial timber salvage harvest. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The DEIS and FEIS finds the cumulative effects and other analysis of impacts to soils to be consistent with the available data and components of the proposed action.

**Public Concern # 38:**

The USFS has also repeatedly concluded that although fires such as this do affect soil productivity and hydrologic properties, the effects of logging (especially with specified ground based skidding) on this fragile post wildfire soil conditions are more severe and more persistent than fire alone. (McIver and star 2000, Beschta 1995 and 2003 (attachment 2), USFS and USBLM. 1997. The Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and great Basins, Volumes I-IV. PNW-GTR-405). The design criteria and mitigation measures inadequately address this issue. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The DEIS (section 4.1) contains a review of research on post fire logging effects on soils, referencing some of the same sources as in your comment. The results seem to vary widely from study to study, and do not definitively support either the conclusions in the DEIS nor the assertions in your comment. Site specific erosion and sediment modeling for the proposed treatment areas (DEIS sections 4.1.2.2 through 4.1.2.4) conclude that the effects of ground based log skidding are about the same or slightly less than those in the unlogged high severity burn portions of the 2002 East Fork Fire. DEIS sections 4.1.2.3.and 4.1.2.4 disclose required design components and mitigation practices for the action alternatives that would adequately minimize the predicted effects associated with sediment and erosion.

**Public Concern # 39:**

The DEIS does not sufficiently recognize the importance of mycorrhizal fungi on forest growth and productivity and it fails to adequately analyze how mycorrhizae will be impacted by the proposed action. The DEIS fails to address how past logging and grazing have already impacted mycorrhizae in the project area. Scientific evidence suggests that mycorrhizae and other soil organisms and processes are extremely important and are easily destroyed or disrupted by ground-based skidding, which is in both action alternatives. Without an adequate discussion of the impacts to soil mycorrhizae, the public and the decision maker are precluded from making an informed decision regarding the proposal, and the Forest cannot assert that there will be no permanent impairment of the soil. 30 C. F. R. §§ 219.27(a)(1), 219.14(a)(2) (prohibiting activities unless technology is available to prevent impairment of soil or water resources). The Forest's past management in this project area has undoubtedly disrupted much of the natural forest soil and fungal communities, and may have resulted in an increase in fungal pathogens. Further logging and ground based tractor skidding outlined in both action alternatives may compound the adverse impacts to the area's soils, fungal communities, and the rest of the biotic community which depends upon their healthy functioning. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The soils specialist report (section 4.4 and 4.4.1) for this project conducts an analysis of the alternatives on the biological components, including fungi, of the soil. The report concludes that in the project areas where biological activity has been sterilized by the high severity burning during the 2002 East Fork Fire, the proposed harvest activities may accelerate recovery of the soil by incorporating harvest residue that provides colonizing sites for soil fungi and microbes. The DEIS (Table 2.4.1) also confirms that coarse, dead, and downed woody debris would be left on site, so that post harvest conditions would meet WCNF Revised Forest Plan guidelines.

**Public Concern # 40:**

A large economic investment to restore this area has already been made and restoration has already been completed on the ground through BAER treatments. The DEIS should provide a more precise presentation and analysis of how the action alternatives would impact expensive BAER treatments that have been (or are scheduled to be) conducted in the project area. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

BAER treatments concentrated on restoration of firelines and protection of streamcourses through the installation of sediment traps. Design criteria used in planning the salvage sale would provide protection for all improvements or restoration treatments conducted under the BAER.

## Roadless

### **Public Concern # 41:**

We would like to make a brief comment in regards to the CFR cited as applying to roadless issues for this project in DEIS chapter 3.7. The DEIS cites the proposed NFMA CFR revisions as 36 CFR part 219 as informing this project because the term “roadless area” is now largely absent.” This alarms us because, not only did this Forest just revise under the currently implemented regulations (1982) ... you are required to follow the 1983 NFMA CFRs, not proposed revisions. We remind the Forest that 36 CFR part 219.17 as implemented is titled “Evaluation of roadless areas” and starts by stating “Unless otherwise provided by law, roadless areas within the National Forest System shall be evaluated ...” It is illegal for the Forest Service to implement guidance from proposed regulations before they are implemented. The DEIS also states that the February 5, 2001 version of FSM 7710 (and corresponding CFR) informs this project and any consideration of ‘unroaded’ areas. This direction was replaced last year and it is not legal for this DEIS to take guidance from that old direction. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

### **Forest Response:**

We agree that reference to the current CFR was incorrect. However, when discussing roadless we are referring to the Forest inventoried roadless areas, which we believe is a definition everyone understands. We have clarified this in the FEIS.

### **Public Concern # 42:**

It is difficult to determine from the maps whether or not roads and cutting units are in roadless areas. We are perplexed by IRA terminology. It seems NFMA should prevail until proposed regulations take effect. (Preservation/Conservation Organization, Hyrum, Ut - #15)

### **Forest Response:**

A clearer map of the roadless boundary is included in the FEIS. The Revised Forest Plan Inventoried Roadless Area (IRA) Maps are the basis for determining roadless area locations.

### **Public Concern # 43:**

The proposed action is described as entailing no road construction or commercial harvest in IRA. We support that language and we do appreciate the changes that have been made to the proposed action since scoping. However we would like to remind the Forest of the three following roadless-related concerns that we have with the DEIS: (1) the Summary lists construction of .4 mile of “low standard road” inside IRA, (2) other chapters of the DEIS and the appendix note construction of temporary road inside IRA (as opposed to the low standard road mentioned in the Summary) and, (3) the maps in the appendix to the DEIS indicated that there will be commercial salvage harvest inside IRA. As such, there is no adequate analysis of the associated irretrievable and irreversible commitment of resources. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

We have determined that half of unit 1 is in an area mapped as roadless during the updated inventory in 1999. This is a mapping error since the roadless boundary should have followed the Wolverine Motorized Trail along the west side of the south half of unit 1. This trail is located on a constructed road. Most of the mapped boundary along the south ½ of Unit 1 does not follow an existing road. However, there is no process in place to correct this mapping error at this time, so to remain consistent with our stated intent of not salvaging in roadless areas, we have dropped Unit 1 from the Proposed Action (Alternative 2) and Alternative 3 in the FEIS. The cost of the road work on existing roads to provide access to the portion of Unit 1 outside of the mapped roadless area is not justified by the salvage values. Construction of .4 miles of temporary road and relocation of the motorized trail to the temporary road location have been dropped from the Proposed Action as well. Relocation of this trail is still important, but without the opportunity to use the temporary road template, a new location or construction method will be needed and will need to be determined in a future analysis.

**Public Concern # 44:**

The UEC is also concerned that some issues we raised in our April 14, 2003 scoping comments have not been adequately addressed. Within a month of the signing of your 2003 Forest Plan, the Forest finalized a huge land trade in this project area. In our scoping comments the UEC expressed concern that newly-acquired public lands in the area (that were not identified as roadless in the 2003 Forest Plan) do meet the criteria outlined for wilderness consideration in FSH 1909.12 and the Wilderness Act. We ask that the Forest more fully consider these concerns in the development of the FEIS. The UEC has not done a new roadless inventory in this area since the 2003 trade, but if we had we would submit that to the Forest for consideration in this analysis. The UEC would like to submit the attached map (attachment 3) for consideration in this analysis. The dark green line is our citizen's National Forest wilderness proposal near the lands affected by the 2003 land trade. Please note that the pink shaded area represents roadless area boundaries contained in your 2003 Forest Plan. About one month ago we submitted GIS coverage of our wilderness proposal to Tom Tidwell. We would like to incorporate that GIS coverage into our comments for this DEIS. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The National Forest System has not exchanged land in this area. It has acquired approximately 3,000 acres using Land and Water Conservation funds in the West Fork Blacks Fork and Brush Creek drainages. Section 25, T2N, R11E was part of this acquisition. It has been reviewed for roadless characteristics and it has been determined that it does not provide a roadless connection to Section 24 to the north (See FEIS 3.7.5). Your proposed wilderness boundary in Section 25, T2N, R11E closely approximates what we have identified as the boundary of roadless land in that Section. We have reviewed your proposed wilderness map and there are no proposed actions under any of the alternatives within or directly adjacent to your proposed wilderness. Your proposed wilderness map will be included with your comment letter in the project file. A more detailed explanation of roadless characteristics in Section 25 has been added to the FEIS and a set of maps and photos has been included in the Project File.

## Infrastructure

**Public Concern # 45:**

The analysis does a very poor job analyzing the effectiveness of closing roads. Other "temporary" roads have become permanent by sheer unwillingness of forest users to follow directions. What are the actual prospects of these temporary roads being closed, being revegetated, and becoming part of the natural environment? (Individual, Sandy, Ut - #6)

**Forest Response:**

As described in FEIS Chapter 2 (p.2-16; Figure 2.2.7), road closing includes restoring the original contour and placing slash and woody debris on the disturbed area to prevent use. Based on the locations of the proposed roads, closure efforts are anticipated to be successful.

**Public Concern # 46:**

The claim on p. 2-12 that new road construction would be minimized is ludicrous. Building 4.6 miles of road to access an additional 200 acres of timber sale is a lot of roads for a small amount of timber. (Individual, Sandy, Ut - #6)

**Forest Response:**

Temporary road locations were determined based on expected skidding distances for ground based equipment. In planning, we made sure that the proposed roads were the minimum needed to harvest the timber.

**Public Concern # 47:**

It's good that new road construction will be only temporary and returned to a more natural state once the sales are through. But if temporary roads stay open as long as people say they are still going to impact wildlife habitat and erosion, as well as being a lure for illegal ORV use and misuse. (Individual, Salt Lake City, Ut - #8)

**Public Concern # 48:**

The Forest Service once again fails to recognize prevailing scientific wisdom (see statement on forests/fire by Ecological Society of America) that a fire of this magnitude is nothing unusual in the ecosystem and that fire is an integral part of forest succession. The proposal outlined by the Forest Service to harvest dead and dying trees over 865 acres includes the construction of new temporary roads and reconstruction of existing roads. Scientific studies indicate that even temporary roads have significant effects on wildlife and in this case these are hardly temporary as they may be on the ground for up to a decade (based on typical length of timber contracts). In summary I remain convinced that a "no action" alternative would be the most scientifically sound response to the 2002 fire. (Individual, Evanston, Wy - #14)

**Public Concern # 49:**

The DEIS fails to adequately note that the supposed temporary roads may be on the ground for a considerable period of time given the length of timber harvesting contracts and likely extensions. They may be temporary on paper only, but on the ground they may be there long enough to considerably alter wildlife behavior and meaningfully fragment habitats (Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities. Stephen Trombulak and Christopher Frissel. Conservation Biology. February 2000.). (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Public Concern # 50:**

Temporary roads have a history of becoming permanent and this should be addressed. (Individual, Sandy, Ut - #7)

**Forest Response to Public Concerns #47 through #50:**

We also are concerned about temporary roads that continue to receive use after they are decommissioned. For that reason, we have specified returning the profile to the original contour, seeding, and covering the surface with woody material or rock to discourage use. Temporary roads would be obliterated as soon as they are no longer needed (refer to FEIS Chapter 2 p 2-16).

**Public Concern # 51:**

The Wasatch-Cache National Forest October 2002 Forest Scale Roads Analysis Report was inadequately incorporated into this site-specific analysis. Pursuant to the direction set forth in the "Recommendations" found in that Forest Scale Report, as well as 36 CFR part 212.1 and 36 CFR 212.5(b), construction of the specified miles of temporary road should be informed by a science based roads analysis that fully informs the road-related decisions to be made. Nowhere in the DEIS does it appear that this has been done. Pursuant to the Objectives and Policy set forth in FSM 7710 and 7712 and the corresponding CFR, we will look forward to an opportunity to provide substantive road management related comment when that is done. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Responsible Official determines whether a roads analysis is necessary, and the degree of detail that is appropriate and practicable (FSM 7712.13). The Responsible Official has determined that enough information is available to make an informed decision without conducting an additional roads analysis.

**Vegetation****Public Concern # 52:**

Although the DEIS also describes the control of possible insect outbreaks as another project purpose, it concedes that neither of the action alternatives can be predicted to actually have any impact on the probability or magnitude of insect outbreaks. (Individual, Las Cruces, NM - #5)

**Public Concern # 53:**

How can one part of the DEIS say that logging will help to control insect outbreaks and another part says that neither of the alternatives will have any real impact on reducing insect infestations. That doesn't make much sense. (Individual, Salt Lake City, Ut - #8)

**Public Concern # 54:**

Another rationale of the DEIS is to reduce the potential of spruce and pine bark beetles to create havoc. The data in the DEIS plainly shows that there is no difference with respect to this issue within any alternative. Thus there is no advantage to selecting an action alternative since it will do nothing to impede beetle activity. Again, there is nothing out of the ordinary, nothing uncharacteristic, and nothing outside of the ecological/historical variability or proper functioning condition with the level of insect infestation that will follow this fire. Adding anthropogenic impacts may increase beetle activity. The data directly leads the analysis to a no action alternative. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Public Concern # 55:**

The DEIS also notes one of the reasons for the sale is to control possible insect outbreaks but still concedes that neither of the two alternatives will have any measurable and meaningful impacts on insect outbreaks. (Individual, Forest Lake, Mn - #9)

**Public Concern # 56:**

The DEIS never justifies the salvage sale on the basis of insect control. Many places in the DEIS state that the salvage sale will have little affect on insect populations. Ch. 1, p. 5 states that "in unburned areas overstocked conditions decrease vigor and increase susceptibility to insect attack" and that live trees are in a stress condition and more susceptible to insect attack." Whether or not that is true, this proposal to cut dead trees in already burned areas will have no effect on the those conditions. Page 1-7 states "salvage of fire weakened trees could have a minimal effect on reducing the likelihood of bark beetle outbreaks." Page 2-23 states that "although it is likely that some fire weakened trees will be attacked by bark beetles, it is unlikely that this will trigger a large scale bark beetle epidemic." The purpose and objective on page 1-8 to reduce potential fire intensity and beetle outbreak is simply not real, but is just another false justification to sell trees. (Individual, Sandy, Ut - #6)

**Forest Response to Public Concerns #52 through #56:**

We agree. This issue was raised during scoping and appeared to warrant analysis in the early stages of the project. This did not appear to be a major concern, but was carried forward in the analysis. As the analysis was conducted, it became apparent that we did not have large areas of fire-stressed trees in the accessible portions of the burn, and the surrounding stands are generally mixed species rather than continuous spruce-fir or lodgepole pine. Therefore, we concluded, and displayed in the DEIS (refer to Chapter 4.6.2), that there is relatively little risk of an outbreak, and that the alternatives would have little effect on insect outbreaks. This has received less emphasis in the FEIS.

**Public Concern # 57:**

At least two additional studies that we are aware of cast serious doubt on post burn salvage logging with respect to productivity. Sexton (Ecological effects of post wildfire activities (salvage logging and grass seeding) on vegetation composition, diversity, biomass and growth and survival of *Pinus ponderosa* and *Purshia tridentata* (MS thesis Oregon State Univ. 1994) noted that even post fire logging over snow reduced regrowth and survival and increased exotic species compared to areas that were not harvested. Rumbaitis-del Rio, University of Colorado in a study on the Routt National Forest (2002) noted that often times the salvage logging following natural disturbances can disrupt the inherent mechanisms of recovery. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

We reviewed several studies during the course of the analysis. Project design and the effects analysis was based both on published material and local knowledge obtained from monitoring and on-site visits by the ID team. Design criteria and mitigation measures are applied to insure the effects are within Forest Plan standards, and were address site-specific requirements for each unit determined during site visits by the ID Team.

**Public Concern # 58:**

The DEIS inadequately analyzes the fact that occurrence of mountain pine beetle and spruce bark beetle are not just normal, but necessary components of the forest ecosystem in the project area. The USFS 1998 Sub-Regional Assessment of PFC for the Uinta Mountains indicates that the mountain pine beetle -- stand replacement fire dynamic is thought to be a key process that ensures the perpetuation of lodgepole pine in the Uinta Mountains. If the proposed harvests were successful in avoiding future beetle outbreaks, then the proposed action may work to move the vegetation in the area away from the properly functioning condition. Since part of this proposal entails suppression and manipulation of this basic forest process, this site-specific environmental analysis should include a rigorous analysis of how the action alternatives may disrupt this process that works to maintain PFC. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Forest Plan desired future condition recognizes the importance of insects in the ecosystem, but states that spruce and pine beetle infestation are kept to endemic levels through the use of a variety of management tools, including timber harvest, prescribed fire, and wildland fire use (Forest Plan p. 4-8). The dynamic described will apply in many areas of the forest, but insect epidemics are not the desired future in the Forest Plan. The proposed treatments affect less than 15% of the area burned (including burned and salvaged forest on private land); the vast majority of the burn would not be harvested or otherwise treated. As stated in the response to comment 5-6, the proposed actions are expected to have little effect on beetle populations. This result is displayed in Chapter 4 of the FEIS.

**Public Concern # 59:**

Being another component of the purpose and need (as well as the action alternatives), the effects of actions working to suppress future spruce beetle epidemics should also be more rigorously disclosed and analyzed in this analysis. Pages 3-42 to 43 of the DEIS explain that, while suppression activities outlined by Bentz and Munson, 2000 (pheromone traps and times burning/removal of trap trees)<sup>7</sup> have been successful in an area immediately west of the project area, stand conditions in the area have not been modified to reduce stand susceptibility in anticipation of future beetle epidemics. The Bentz and Munson, 2000 research is cited in the context of providing supporting evidence that selective logging of Engelmann spruce would help lower the probability of future spruce beetle outbreaks. We believe that this is an inaccurate use of the research done by Bentz and Munson. That study focused on reduction of beetle populations with pheromone traps, trap trees, and removal of infected spruce boles within a small window of time (two weeks in August). Speaking to known beetle response to commercial thinning in Engelmann spruce, this study concluded that: "Other silvicultural strategies, such as thinning to reduce stand susceptibility to the spruce beetle have not yet been tested. To maintain minimal beetle-related impacts in susceptible, isolated spruce stands, populations should be monitored and the direct suppression efforts identified previously employed if the populations surpasses endemic levels of beetle activity." <sup>7</sup>---West. J. Appl. For. 15(3):

122-128. The science cited does not support the proposal to implement a pre-emptive commercial thinning in Engelmann spruce to head off a future beetle outbreak. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The proposed action does not include commercial thinning of spruce. The reference to Bentz and Munson was included not to promote thinning, but simply to display that suppression activities do not modify stand structures that provide susceptibility to beetle mortality. It is true that as this project first began, fire weakened trees were thought to present a potential source for outbreak occurrence. However, as the analysis proceeded, it became clear that the proposed action would have little effect on beetle populations because of the limited numbers of weakened spruce in the areas proposed for treatment (most were killed by the fire) and the large areas that would not be salvaged due to roadless, MPC or other environmental restrictions. This was clearly displayed in the effects section of the DEIS (Chapter 4.6.2). The statement that the Bentz and Munson research was cited in the context of providing support for thinning assumes a conclusion not intended in the document. We have tried to clarify the beetle issue in the FEIS.

**Public Concern # 60:**

If, after this NEPA process is complete, it looks like additional volume in this project area may sold, we ask that an additional site-specific environmental supplement be prepared, and the public be allowed an additional opportunity to provide substantive comments. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Any further proposals within the area would require another decision that would be supported by NEPA documentation.

**Public Concern # 61:**

Similarly, while we are aware of the fact that some publics have submitted comments expressing a sense of urgent panic over increased burn potential in (future) beetle killed areas, we believe that the available body of scientific knowledge indicates that this is not a legitimate concern for Lodgepole, aspen, or spruce/fir. The sub-regional PFC assessment indicated that continuation of the beetle-wildfire cycle in Lodgepole may actually be requisite for continued maintenance of the dominance of that species in the Uinta Mountains. Aspen also need infrequent stand replacing fires to perpetuate regeneration of this early successional species. Since it is not fundamentally dependant on stand replacing events, the situation for spruce/fir is a little different. However, the long-perpetuated myth that says ‘subalpine forests with a history of high beetle mortality present a greater risk of intense wildfire’ is not supported in the scientific literature. A 2003 publication in the journal *Ecology* presents research and findings that do “not support the long-standing notion that insect-caused mortality increases fire risk, which is also an important consideration in modern forest management following insect outbreaks.” Furthermore, the study found that, even many decades after the stand replacing beetle event, the intensity of fire was not higher, and may even have been less, when compared to equivalent unaffected nearby spruce/fir stands. The authors also found that despite increases in the dead fine fuels in the beetle-killed spruce stands, the fire density had not subsequently increased. These are significant and central scientific findings that directly conflict with the assumption made throughout this DEIS that the fire danger would increase in spruce/fir areas as a result of future spruce bark beetle epidemics. In another 2003 publication in the *Journal of Biogeography*, scientists concluded that, “The lack of increased fire spread or occurrence in beetle-affected stands suggests that a response of fire-hazard mitigation following outbreak may not be necessary in order to maintain a normal fire hazard.”<sup>19</sup> Furthermore, in regards to lower intensity wildfires, this research concludes that: “Beetle outbreaks may have a counter-intuitive effect on the potential of low-severity fire to spread. Stands affected by beetle outbreak may experience increased moisture as suggested by the proliferation of mesic under-story herbs (Reid, 1989),<sup>20</sup> and this increase in moisture may actually decrease the potential of low-severity fire to spread in beetle-affected stands.” It is important to note that this research focused on fire behavior in beetle killed stands many decades after the beetle epidemic ...at the point in time when this DEIS assumes that the fire danger would be greatest in this project area.<sup>21</sup> Given that NEPA mandates a rigorous analysis and the use of all credible scientific research, this research (and additional research that may be found) should be incorporated into and inform the development of this project, especially since it

casts credible scientific doubt/controversy on assumptions made in the development of the Range of Alternatives, the analysis of the Affected Environment and Cumulative Effects Analysis. 15---Bebi, P., D. Kulakowski, and T.T. Veblen. 2003. Interactions between fire and spruce beetles in a subalpine Rocky Mountain forest landscape. *Ecology* 84(2): 362-371. Ecological Society of America. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

We have tried to clarify the fuels discussion in the FEIS. We agree that insect mortality would not increase the number of fires (or fire density in the terminology of the 2003 paper). Occurrence depends upon weather, ignition sources, drought, etc. However, the increased fuels may increase fire intensity if one should ignite. The 2003 paper referenced draws a similar conclusion, stating that "potentially the large quantity of standing dead fuels might be expected to contribute to more intense and widespread fire in the affected stands, especially in comparison with younger stands lacking large numbers of large, standing dead trees....The widespread fires of the late 1800s in our study area followed major spruce beetle outbreaks in the mid 19th century that were comparable in extent and intensity to the 1940s outbreak. These outbreaks would have left abundant dead fuels for many decades."

The discussion in Chapter 3 addressed the combination of fuels, weather, drought and ignition that resulted in the fire intensity of the East Fork Fire. Discussions on pages 3-54 (Fire starts as part of risk), and 3-61 (Fire occurrence in the East Fork Fire perimeter in the next several decades) indicate that the concern is fire intensity, not number of fires. Based on observance of the East Fork fire behavior, we believe the fuels are an important consideration in future stand development and risk of increased fire severity.

As stated in Chapter 4.6.2, Effects Common to All Alternatives, the effects on beetle predation would be minimal under any alternative because of extensive acreages in inventoried roadless or MPCs that preclude treatment. One reason we did not consider an alternative that included harvest of green trees in adjacent unburned stands is that we believe it is unlikely that the level of beetle activity following the fire will trigger a large scale bark beetle epidemic (Chapter 2.5.1).

**Public Concern # 62:**

Effects of the proposed harvests to the ongoing aspen decline in the project area is inadequately addressed in the DEIS. We are particularly interested in seeing this analysis disclose and consider how insect suppression activities would affect aspen movement towards properly functioning condition. Since the size of current (and historic) presence of aspen in the project area is large, we ask that the analysis rigorously incorporate the PFC and DFC for aspen into this analysis. For example, there is every indication that the 2002 fire and any future beetle epidemics would most likely work to halt aspen decline and restore aspen dominance. How would the proposed logging and insect suppression-related efforts to propagate conifer dominance work towards your Forest wide Objectives, standards, guidelines, and Goals to restore aspen dominance? Given that your Forest Plan provides repeated direction to maintain and improve aspen through efforts to halt continues aspen decline, we believe that restoration of aspen should be specifically mentioned in the Purpose and Need for this project. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

We agree that the fire was very beneficial in regenerating aspen, and therefore assists moving aspen toward PFC and Forest Plan objectives. Previous fires such as the Lily Lake Fire of 1980 regenerated large areas of aspen, and we expect similar results with the East Fork Fire. This is a desirable outcome and we are not proposing actions to increase conifer dominance. We expect that conifers will eventually reestablish along with the aspen, and the areas we intend to plant are those areas that have inadequate aspen regeneration, and are generally those areas where aspen did not occur prior to the fire.

**Public Concern # 63:**

Given clear Forest Plan direction for aspen, and the fact that half of the Purpose and Need is to restore this area, we believe that the restoration half of the Purpose and Need does indicated that aspen decline should at least be an issue that drives the development of the proposed action and the analysis of Environmental Consequences. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The fire did an excellent job of regenerating aspen in those areas where it existed prior to the burn. We consider this a beneficial effect of the fire. By limiting our activities to salvage of burned timber, we preclude any harvesting or other treatments in unburned aspen. Any proposal to regenerate aspen would be a separate analysis and decision.

**Public Concern # 64:**

The DEIS lacks adequate description of and effects to old growth. We believe that the presence of and effects to old growth should be a driving issue that is rigorously analyzed in chapters 3 and 4 of this analysis. Old growth description and analysis is raised only in passing in the analysis of the effects to snag habitat. This is not sufficient as snag habitat is not the same as old growth. Because there is some confusion between the two, we recommend that the analysis include a better description of the definitions being used to define old growth and how that is different from snag habitat. We also ask that the analysis present the results of the old growth aspen in the project area and harvest units, as this is not currently addressed. The condition and age classes of the aspen in the project area should be disclosed and the DEIS should analyze the effects of treatment to this aspen component. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The area included in the East Fork Salvage Timber Sale area has not been mapped as old growth forest. The Forest intentionally did not use the term “old growth” in Forest Plan revision work, but instead uses the separate terms mature and old to cover forests that have the characteristics similar to those formerly covered in “old growth”. Chapter 3 discusses the old and mature forest and section 4.6.3 displays the effects of the alternatives on mature and old structure. No aspen treatments are proposed in any alternative; salvage is limited to fire killed conifers.

**Public Concern # 65:**

We are concerned that some of the Design Criteria for Economics will lead to harvest of substantial volumes of live trees that, while injured by the fire, are not going to die because of injury sustained by the fire. Specifically, the burn mortality guidelines for lodgepole pine and Engelmann spruce “would be in ½ bole circumference is burned, consider the tree dead.” While its cambium is known to be easily damaged by fire and bark beetles, Engelmann spruce are known to survive damage more than ½ half of the cambium. Because this may lead to the cutting and commercial removal of many green trees that are not going to die from the 2002 fire, we would like the EIS to specifically cite and examine the dependability of the research relied upon to establish this standard. We also would like other standards to be seriously considered. One possible example is from Bentz and Munson (2000). They considered and Engelmann spruce to be fully attacked and effectively dead if damage around the bole exceeded 75% of the circumference. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The recommendation to remove trees that had 50% or more of the bole circumference burned was based on several factors, including the likelihood of the tree surviving, potential for windthrow, and bark beetle attack. The literature available indicates a wide range of survivability between species and levels of injury from fire and subsequent insect activity. We used the information available, including recommendations developed on other forests that were based on extensive review of the literature to determine what the criteria would be (Section 3.9.3). However, as the project analysis proceeded, it became clear that the recommendation was not needed. The trees to be removed are those that were killed by the fire as evidenced by absence of live needles in the crown. We have adjusted the criterion in the FEIS to reflect that we are removing only dead trees.

**Public Concern # 66:**

The analysis also fails to adequately address the fact that the proposed salvage and the footprint left from temporary roads would increase access for domestic livestock. Livestock have been directly implicated in the decline of aspen and herbaceous vegetation in much of the project area. This is a particular concern in the West Fork Blacks Fork watershed where sheep grazing and the impacts on forest health are substantial.

They have eliminated the herbaceous component in much of the lower elevation Lodgepole. The analysis of cumulative effects insufficiently addresses these impacts. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Please refer to the footnote titled Guideline G44 in the DEIS under 3.11.5 and G73 in the FEIS (this was a typographical error in the DEIS). The Lily Lake Fire of 1980 and effects of subsequent management activities provide a very good indication of what could be expected following the East Fork Fire salvage. An extensive road system was constructed, timber was salvaged logged, and most roads were left open for 10 to 15 years to allow firewood removal. Grazing continued at and above levels prior to the fire. Aspen regenerated and grew well in all of the areas that contained an aspen component prior to the fire. Bradley et.al. (1992) state that the undergrowth of climax or persistent lodgepole pine stands is not usually diverse or dense. Harsh growing conditions and/or dense canopy permit relatively few species to flourish. They reference Figure 35, a photo of a dense even-aged lodgepole pine stand in the Uinta Mountains with little other vegetation. Sheep typically do not prefer to graze in the lodgepole pine due to the lack of forage, both in quantity and quality, when compared with forage quantity and quality in the adjacent open areas. We typically monitor these open areas as key areas since they will show the trends of grazing long before other less preferred areas. Recent monitoring of meadows adjacent to lodgepole pine types in the West Fork Blacks Fork shows that sheep grazing is not having a detrimental affect on the riparian vegetation types and ground cover conditions on the dry uplands are being driven mainly by abundant pocket gopher populations. There are 3505 acres classified as suitable range in the conifer vegetation type (primarily lodgepole pine) in the West Fork Blacks Fork. There is one small area of lodgepole pine type near the fire in the West Fork-Blacks Fork Allotment that is classified as suitable range. The condition rating for this lodgepole pine type (A-12, S6 83/69) was excellent. It produces good herbaceous cover because it has intermittent openings and wet areas. There are 3505 acres classified as suitable range in the conifer vegetation type, primarily lodgepole pine downstream from the fire in the lower part of the West Fork Blacks Fork drainage. Half of this is classified as being in good condition and half as being in fair condition. There are no suitable conifer types classified as being in poor or very poor condition (Zobell 2004).

**Public Concern # 67:**

The DEIS and the Chief of the Forest Service have noted that noxious weeds represent one of the greatest threats to National Forest landscapes. The DEIS also notes that many of the most troubling weeds are a direct problem associated with road building and logging and that many of these noxious weeds once on site are easily transported by wind. So what does the DEIS do? It proposes to bring noxious weeds in with extensive long term logging and road building. The answer to mitigate the problem is none other than the absolutely unproven method of washing off vehicles! Again the data suggests one direction to prohibit one of the leading and significant problems facing national forest lands.

**Forest Response:**

The DEIS points out that although vehicle travel is a means of transport for weed seeds. The primary means of seed dispersal for these species is by wind and the potential for new infestations of these species is not changed by the presence and movement of logging equipment. The potential of new infestations of weeds, that need a carrier for dispersal, is being mitigated using the best known method of washing vehicles. Washing vehicles and monitoring for early detection and eradication are known methods of preventing new infestations of noxious weeds.

## Fire and Fuels

### **Public Concern # 67:**

You recognize that a fire of this magnitude is the primary tool of natural succession! We could watch a forest naturally restore itself. Yet herein you are “mucking” with a natural fire zones. This is an ecological study area, will have no impact on local economies (according to Uinta County, WY data), and should not be part of an agency effort to buy local support with a logging operation that is a non-player in the good management of the western Uintas. (Individual, Hyrum, Ut - #7)

### **Forest Response:**

About 15% (including private land salvage) of the burned area within the fire perimeter is proposed for salvage. About 85% of the burned area would be allowed to naturally restore itself. This area includes large areas of roadless land in Boundary Creek, East Fork Bear, and West Fork Blacks Fork drainages. FEIS 4.11 describes financial effects of the alternatives. Please also refer to the response to Public Concern # 103.

### **Public Concern # 68:**

The DEIS claims in one place that the salvage logging will help prevent big fires in the future. In another it notes that the original fire didn't spread very well into adjacent areas. (Individual, Salt Lake City, Ut - #8)

### **Forest Response:**

The EIS does not claim that salvage would prevent big fires in the future. However, it can help reduce the intensity of the fire in salvage units and can provide locations where a more effective fire break can be constructed if a fire occurs.

### **Public Concern # 69:**

Surely the “fire prevention” rationale is not appropriate for this ecosystem. The DEIS details fairly obvious facts: the conditions for an abnormal, catastrophic fire in this area depends upon highly unlikely weather conditions AND a fully grown forest, decades away, with understory and ladder fuels. This has nothing to do with decaying timber on the ground from decades previous, the timber from this last fire event. The DEIS itself clearly noted that even this fire, under severe conditions, had a difficult time spreading into adjacent areas. (Individual, Forest Lake, Mn - #9)

### **Public Concern # 70:**

Another rationale/concern for the salvage operation is the concern over re-burn. As you know one of the principle findings in the literature is there is no meaningful direct connection suggesting a reburn is more likely if post burn logging does not occur (McGiver and Starr offer this firm conclusion as well). While the "Affected Environment" section of the DEIS clearly notes this, the only analysis offered is that more acres would be treated in Alternatives 2 and 3 than Alternative 1. And even that notes because of the logging proposed on private sections the potential for reburn affecting the national forest lands is limited. The DEIS notes in the "Affected Environment" chapter but not in the analysis section of the DEIS, that the likelihood of "extensive reburning of burned areas is unlikely until a conifer overstory with an understory fuel ladder develops". At the absolute minimum this is some 3-6 decades down the line, likely longer than that. This would fall within the characteristic, contrary to the DEIS, for return interval given this fire group/regime. (Preservation/Conservation Organization, Hyrum, Ut - #15)

### **Public Concern # 71:**

We believe the unsupported and inapplicable assumptions that were relied upon in the analysis resulted in inadequate and faulty analysis. In 1995 the USFS Pacific Northwest Research Station prepared a report title “Review of Recommendations for Post-Fire Management.” Referred to at the Everett Report, it found that “there is no support in the scientific literature that the probability for reburn is greater in post-fire tree retention areas than in salvage logged sites.” (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The EIS does not predict a higher probability for reburn. In discussions on pages 3-54 (Fire starts as part of risk), and 3-61 (fire occurrence in the East Fork Fire perimeter in the next several decades) the concern is fire intensity, not number of fires. Based on observance of the East Fork fire behavior, we believe the fuels are an important consideration in future stand development and risk of increased fire severity. The absence of basic research does not mean that there are no effects from a reburn in salvaged vs. unsalvaged stands. McIver and Starr (2000) point out that no studies have examined how postfire logging alters future fire risk. However, they go on to say that "Work examining fuels on harvested green tree stands (Brown 1980) suggests that postfire logging may increase short-term fuel loads and fire risk owing to increased fine activity fuels, but reduce intermediate and long-term fire risk owing to removal of larger dead structure." They state that logging in post-fire stands (as opposed to green stands), however, would be expected to produce less fine activity fuel because the fine material burned. They also state that adaptive management is one way for managers to learn by doing and to reduce the uncertainty behind site-specific practices and prescriptions. Short term risk of high intensity reburn is probably low in either logged or unlogged stands based on Brown, et.al. (2001).

Please refer to the DEIS page 3-53: Large woody fuels contribute to development of large fires and high fire intensity (Brown et al. 2001). Fire hazard and resistance to control are highest when large woody fuels exceed 25 to 30 tons per acre with small woody fuels of five tons per acre or more (Brown et al. 2001). In the high and moderate severity burned areas, a fuel loading increase in the 8 to 20 inch diameter size class is expected over the next two decades. The fuel loading could range well above 30 tons per acre depending on existing stand densities. DEIS page 3-52: Unburned Area within the Fire Perimeter: Many acres were not burned or burned at patchy, low intensities within the fire perimeter. These acres still contain fuels but did not burn (or burned lightly) due to variable weather and fuel continuity. Many areas where past harvesting and subsequent fuel treatments were done only had patchy spot fires in down woody fuel pockets within their perimeters. Other areas where fuel treatments were not done following partial timber harvest burned with similar extent and intensity to areas that had not been harvested. DEIS page 3-53: Some stands within the East Fork Fire Perimeter had fuel treatments prior to the fire. Most notable are stands in Section 24, T2N, R10E, and Sections 18, 22, 24, and 30, T2N, R11E where machine piling or prescribed burning had been done to treat fuels created by timber harvest. In general, these stands were occupied by sapling size lodgepole pine and served as fuel breaks, reducing the rate of spread and intensity of the fire. Small pockets of fuels within these units burned as spot fires from embers, but most of the young lodgepole pine survived. An exception was in the West Fork Blacks Fork. The wind driven fire burned through an old timber harvest unit, killing most of the lodgepole pine saplings. DEIS page 3-61: A reburn results when fall-down of the old burned forest contributes significantly to the fire behavior and fire effects of the next fire (Brown 2001). The possibility of a reburn is small on any one site, but it is high over the landscape. Accumulations of large woody fuels can hold a smoldering fire on a site for extended periods (Brown 2001). Heat from the large fuels in direct contact with the ground could have severe effects on soils. Potential for spotting and crown fires is greater where large woody fuels have accumulated (Brown et al. 2001). A severe fire occurrence in the next several decades would depend on amount of fuels present, vegetation development, point of ignition, and weather. Effects of a reburn under high to extreme burning conditions in the areas that burned at a moderate to high severity in 2002, based on Brown's paper in included on page 3-61 of the DEIS.

As previously noted, observations of large fires on the north slope of the Uinta Mountains indicates that they are usually dependent on strong winds during droughty conditions and fuel ladders that allow crown fires and long range spotting. The East Fork Fire did not readily spread into the old Boy Scout Fire perimeter (8 years old) or the Lily Lake Fire perimeter (22 years old). Many of the fire killed trees in the Boy Scout Fire were still standing and did not contribute to fuel loading. Extensive salvage and firewood removal from the Lily Lake Fire during a period of about 10 years following the fire removed most of the large down woody material that would have developed after the burn. Extensive reburning of burned areas within the East Fork Fire is unlikely until a conifer overstory with an understory fuel ladder develops, but that condition will develop prior to substantial decay of the larger diameter logs. Fire group 10 has relatively dry climatic conditions that result in slow decay of large diameter logs. Also see responses to Public Concerns #61 and #68.

**Public Concern # 72:**

The DEIS noted the following factors: Historic (tie hack) and modern industrial logging has already removed much of the fuel that would have been on site. The forest types in the area are fundamentally dependent on infrequent stand replacement fires such as the 2002 fire. Then, on page 1-5 of the DEIS (Purpose and Need), the analysis arbitrarily concluded that, "Forest stands that would have naturally developed with fire have evolved without fire for nearly a century. The results are changed stand structure, species composition and ecological function, heavier fuel loads, and the decreased ability of trees to resist disease. (Arno et al. 1992, Arno et al. 1997)". Aside from the fact that it is not logical to conclude that 100 years of fire suppression has significantly altered a forest with stand replacing regimes ranging from 100 to 500 years, it is not appropriate to apply the Arno et al. research to the forest in the project area. Both Arno studies focused solely on old growth ponderosa pine, western larch, and old growth Douglas fir forests of the Northern Rockies. The Uinta Mountains are not part of the Northern Rockies and those tree species are not in this project area. More importantly, old growth ponderosa, Douglas fir and larch are adapted to radically different fire regimes that involve cooler, more frequent fire events. Quite the opposite, the Lodgepole, spruce/fir and Engelmann spruce found on the north slope of the Uinta Mountains are adapted to stand replacement events with infrequent return intervals. The average return interval for stand replacing events in the project area is between 100 to 300+ years for Lodgepole, 200 to 400 years for spruce/fir, and 300 to 500+ years for high elevation pure Engelmann spruce. The implications for post-fire management in these radically different forest ecosystems are tremendous. They are also well known. This site-specific environmental analysis should rely on research that speaks to the Lodgepole, aspen, spruce/fir and Engelmann spruce in this project area, not unrelated forest ecosystems with unrelated fire regimes. The UEC believes this methodology of citation may have contributed to flawed assumptions regarding this post-wildfire commercial timber (salvage) sale.

**Forest Response:**

You are correct that the citations were from research papers directed toward Montana forest cover types. This citation has been removed from the FEIS. Effects of fire exclusion on lodgepole pine and spruce/fir types are not readily observable at the stand level, but fire suppression is very likely to be resulting in a skew toward a higher percentage of older age classes and multilayered canopies than would have occurred under natural fire regimes. There is some reference in the literature to the effects of fire exclusion on decreasing forest health and fire ecology at the landscape level in lodgepole pine and spruce-fir forests (Keane, et.al 2002). Over 50% of the East Fork Fire was in mixed conifer and conifer aspen which has a Fire Regime III or V classification (See EIS Table 3.9.1). There are strong similarities between fire ecology in these types and similar types throughout the western United States. Arno, et.al. (2000) described the tendency toward greater uniformity in stand ages, physiological stresses, opportunity for extensive mortality caused by insects and disease, increased loadings of dead and ladder fuels, which increases the likelihood of unusually severe and extensive wildfires in forests with historic mixed severity fire regimes that are now tending to have more stand replacement fires. They continue to cite other literature that when a large and unusually severe fire occurs in a wilderness environment, it ultimately creates a correspondingly large mass of heavy fuels, starting 12 to 15 years after the fire when much of the dead timber has fallen. Modeling suggests that the effects of continuing this trend will be higher proportions of large stand-replacement fire in wilderness landscapes. There is no reason to believe that this would not also apply in relatively large non-wilderness landscapes where no salvage harvesting is done. The FEIS includes some of these references in the Purpose and Need and in the fire and fuels section of Chapter 3.

## Wildlife

**Public Concern # 73:**

We appreciate your decision to stay out of roadless areas with any harvesting and roads. However, we find troubling that the DEIS fails to note the "temporary roads" which are constructed could be on the ground for up to a decade while harvesting continues. Study after study has shown temporary roads have the same effect upon wildlife habitat as permanent roads. Once a road is created, the affected forest simply is not the same - you have altered the landscape in a very real, long lasting fashion. (Individual, Forest Lake, Mn - #9)

**Forest Response:**

Temporary roads would be recontoured under this proposal. Recontouring essentially makes the road impassable on sideslopes and scattering slash on them makes them difficult or impossible to use on flat ground. Temporary roads would be recontoured within one season of completion of use (generally within 1 1/2 years of construction). Salvage sales are not allowed extensions of time except for additional operating days to make up for lost days if the Forest Service suspends operations due to weather or other unforeseen circumstances. Recontouring followed by scattering slash on the surface results in fairly rapid recovery of vegetation. Since the temporary roads are within burned areas, their surfaces would recover in a manner similar to the adjacent burned area.

**Public Concern # 74:**

The DEIS notes repeatedly that wildlife habitat will be harmed and fragmented if the proposed action is implemented, and it is confusing why this is therefore even being considered. (Individual, Las Cruces, NM - #5)

**Public Concern # 75:**

The DEIS notes that habitat will be further aggravated and fragmented if the proposed action is implemented, slightly less if the NO ROADS alternative is implemented, and with no effects if things are simply left alone. Why wouldn't a meaningful goal be to "protect the habitat from further fragmentation?" (Individual, Forest Lake, Mn - #9)

**Public Concern # 76:**

With respect to wildlife, not a single species of note in the DEIS would be harmed by the no action alternative. Fragmentation of habitat by the fire is a non-issue since the fire burned within the historical variability expected. Fragmentation that would be caused by logging is well outside the historical variability and the proper functioning system. Each action alternative insults the whole forest system with real structural and functioning fragmentation. Again the data directs the Forest Service to the no action alternative. How and whether either action alternative affects the viability of these species is not in any context quantitatively documented within the DEIS. If anything, the DEIS notes that many species will be harmed and when viewed across the whole forest system, such impacts are likely to be pronounced. A large number of species will likely be harmed to some degree--add the degrees up and this is an issue that can't simply be dismissed from any analytical context, cumulative or not. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response to Public Concerns #74 through #76:**

See DEIS 3.11.6, Fragmentation, pages 3-74, 75: The East Fork Fire resulted in large scale, temporary fragmentation of the landscape. Fire history studies indicate that wildfires created a mosaic of habitats in the Uinta Mountains, and that forest habitats were naturally fragmented (Wadleigh 1997). Open roads are a linear, continuing source of fragmentation. Timber harvest and temporary roads result in temporary fragmentation similar to fire but at a smaller scale than the East Fork Fire. Salvage of burned trees and construction of temporary roads would have little effect on wildlife due to fragmentation. There would be minor short term effects due to construction, use, and closure of the temporary roads and timber harvest over an expected 2 year period. See DEIS 4.8.4, Pine Marten, page 4-44: In areas of high to moderate burning where canopy was decreased to less than 30%, a negative short-term effect is associated with the marten. However martens benefit where fires were less intense and small openings of diverse habitat were created (Koehler and Hornocker, 1977, Koehler et.al. 1975; Viereck and Schandelmeier, 1980). See DEIS 4.8.4, Pine Marten, page 4-44: Temporary roads may affect movement, but there should not be any increase of habitat fragmentation in the long term. Connectivity of snag habitat and down woody material is displayed on Map 4.9.1, Appendix A. See DEIS 4.8.9, Alt 2, page 4-48: Under this alternative, 279 acres of low intensity burned area are proposed for salvaging. The open road density would be slightly reduced. This alternative would provide a slight decrease in cover and open road density, which may make it easier for some species to move across the landscape. Because there would be only a temporary change in vegetative cover and the open road density would decrease, this alternative would have little effect on fragmentation. Following recontouring, the road would appear as a linear opening. Within 10-15 years

(depending on location), the area would become heavily brushed in or grown in with young trees (FEIS 2.3.4).

**Public Concern # 77:**

The proposed action also entails non-salvage commercial harvest of green Engelmann spruce (mature and old growth) in a 'preventative' attempt to head off future spruce beetle population spikes. It does not appear that the impacts to suitable lynx habitat incorporated this non-salvage green component of the commercial harvest. Impacts to suitable habitat from temporary road construction, also, are not addresses. We are concerned that the combined components of the proposed action would reduce suitable denning habitat another 1.7%. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Fire damaged trees that are likely to die within 1 year were included in the action alternatives to reduce potential brood sources that could lead to increased beetle infestation of healthy trees in areas adjacent to the burn. The lynx analysis assumed that these trees would be removed and that the removal of these trees from low intensity burn areas would reduce lynx denning habitat in those areas (generally in areas mapped as unburned or low intensity burn). Field reconnaissance has not identified any buildup of spruce bark beetles at this time. We are therefore dropping the dying tree component from the proposed action. Only dead trees would be salvaged. The FEIS has been changed to reflect this modification. Temporary roads would have similar habitat effects to the effects of timber salvage within the units following completion of use since they would be recontoured. There is approximately ½ mile of temporary road in six segments through forested ground outside of timber salvage units that would also be recontoured. This temporary road clearing would remove approximately 1 ½ acres of forest in parcels averaging ¼ acre in size. This would add about .02 % resulting in 13.52% unsuitable habitat under Alternative 2 and is insignificant to the analysis of denning habitat.

**Public Concern # 78:**

The discussion about beaver seems to be notably lacking in that the sole analysis is that there will be no harvesting within riparian areas and thus no impacts to beaver. Beaver frequently leave riparian areas to harvest wood for beaver dam structures. They leave riparian areas to disperse. This analytical context must be cumulative in nature and not so tightly constrained as to suggest beaver never leave the water or the edge of the water. Furthermore, there seems to be no trend or analysis of beaver populations within the analysis area. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 79:**

The DEIS presents the case that beaver population trend data, correlations to habitat changes and associated analysis really doesn't matter anyway because trees will not be logged in riparian areas, and affects from temporary road (re)construction in riparian habitat will be mitigated as necessary. We would like to remind the Forest that the Design criteria will allow for limited logging in riparian RCHA with approval of specialists, and logging out of riparian areas (RHCA) has been shown (by McIver and Star (2002), and many others) to consistently induce short term increases in sediment inflow to riparian areas. Regardless, the Forest is required to have MIS population and trend data, and conduct rigorous analysis of that data to inform timber sale salvage projects such as this one. As it stands the analysis of this MIS is in contradiction to the regulations promulgated under NEPA. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Landscape altering fires are detrimental to some species while benefiting others. Beavers are affected both positively and negatively by large fires. Beaver populations benefit from large fires that change the succession of vegetative structure, providing abundant forage/dam materials. Negative affects are from predation due to the loss in security cover. The removal of fire killed trees would not increase the level of foreseeable predation during foraging or dispersal. Salvage harvest would occur in a few Riparian Habitat Conservation Areas (RHCA's), but not in riparian areas. RHCA's are mapped as a fixed width along streams used primarily to identify areas where management actions emphasize riparian values. Actual riparian areas have varying widths along stream channels. Salvage units would not be located in riparian areas. Field reconnaissance indicates that salvage operations can be conducted outside of riparian areas

but within the outer edges of RHCA's with no adverse effects on the riparian areas. Salvage units would not be located on slopes within RHCA's that drain into streamside riparian vegetation. Design criteria and specialist involvement for location of salvage harvest units in relationship to riparian areas would protect the riparian areas and values associated with them. A beaver monitoring protocol has been established with monitoring to occur in randomly selected sections. This protocol was used during the summer of 2003 to establish a baseline in sections selected in and near the East Fork Fire (EIS 3.11.6). Additional information on management indicator species has been added to chapters 3 and 4 of the FEIS..

**Public Concern # 80:**

Without adequate and current population trend data for three-toed woodpecker habitats the analysis dealing with percentage of three toe woodpecker habitat lost likely has no merit. Suggesting lots of unsalvaged stands abound may have no meaning whatsoever since many of those stands don't harbor significant stands of dead trees. Woodpeckers carry numerous fungal species in their beaks which aide in the decomposition of trees leading to the cavities necessary for both woodpeckers and many other species (Saab, et.al, 2004; Jackson and Jackson, 2004; and Ferris, et.al., 2004). The authors note that woodpeckers are veritable landscape architects and play a crucial keystone role in forests. (See The Condor, Volume 106, Number 1, February 2004.) (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 81:**

The DEIS provides a generalized discussion of your MIS, but lacks any substantive presentation and analysis of the population status and trend at both the Forest scale and at the project level. Without presentation and original analysis of this quantitative data at the Forest and project scales, the analysis is insufficient. Results of UEC's annual MIS monitoring FOIAs indicate that the Forest has limited quantities of monitoring data Forest wide and at the project scale for three toed woodpeckers and may not have enough data to establish three-toed woodpecker trends at the project and Forest scales. McIver and Starr (2000), cited throughout the DEIS, noted that the three-toed woodpecker response to post fire logging was somewhat unique because their nesting frequency was stable in post fire control areas in every single study they could find. Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response to Public Concerns #80 and #81:**

Presence/absence surveys were conducted for Three-toed woodpeckers within the burn perimeter and an increase in individuals was noted. This correlates with research and studies that indicate initial increased populations levels in areas of post fire and a decrease in subsequent years. Because of this natural boom and bust population cycle related to large, infrequent disturbances in local areas, it is very difficult if not impossible to establish trend data. Mitigation, project design criteria, and Forest Plan direction provide for the viability of the species throughout it range. Table 4.8.4 displays the large acreage and number of fire killed trees that will remain following alternative treatments. Additional information is included in the FEIS addressing MIS at the Forest and project level.

**Public Concern # 82:**

Clearly, to meet FP Guideline 15, consideration must be expanded beyond the approximate 30 acre nest site to include the much broader post fledgling areas. While goshawks may not be attracted to the severe burn reflectance areas, the broader issue is impacts from additional anthropogenic activity upon the proejct area, including foraging areas. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 83:**

Quantitative population monitoring data for goshawks is presented at the forest wide level, but there is not analysis of forest wide trends or correlations to habitat changes. The existing project level monitoring data should be clearly presented along with project level trend data that is accompanied by an analysis of correlations of habitat changes. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response to Public Concerns #82 and #83:**

No goshawks were found during the taped call surveys surrounding proposed salvage units in the summer of 2003, and walk through surveys showed that most of the potential habitat within the fire perimeter is low quality. Since only dead trees would be salvaged and Forest Plan snag densities would be maintained under the alternatives, effects on post-fledging and foraging areas for goshawks would be very minor.

Project clearance surveys would be conducted prior to implementation. If any species protected under an authority are discovered, mitigation measures and/or coordination efforts with Fish and Wildlife Service would be initiated. DEIS Table 3.11.9 displays monitoring of goshawk territories on the Mountain View and Evanston Districts. An additional table displaying Forest wide goshawk monitoring has been included in the FEIS along with additional information addressing MIS at the Forest and project level.

**Public Concern # 84:**

We see no analysis at all dealing with migratory birds and relevant concerns surrounding the Migratory Bird Treaty Act and executive Order 13186 issued in 2001. These issues cannot be put under the umbrella of other wildlife species review in this DEIS. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 85:**

The current listing of mitigation measures, project design criteria and textual description of environmental consequences to other wildlife species are not sufficient to address concerns with migratory birds under the Migratory Bird Treaty Act, which should be considered a driving issue in this site-specific environmental analysis. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response to Public Concerns # 84 and # 85:**

In Executive Order 13186 (1), "support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable adverse impacts on migratory bird resources when conducting agency actions." Landscape altering fires such as the East Fork change the successional stages of vegetation these changes are detrimental to some wildlife species and beneficial to others. Under 2.2.9 Wildlife Design Criteria "the East Fork fire has created abundant habitat for species dependant on dead trees. Large areas of this habitat will be maintained and will include connecting corridor, Also there are some large islands and corridors of unburned forest within the fire perimeter. These will be maintained intact. Some areas burned at low intensity with scattered pockets of mortality. Older trees within these areas will be maintained for old growth and cavity dependant species habitat. Avian species/habitat concerns and agency compliance concerning the Migratory Bird Treaty Act and Executive Order 13186 is addressed in the FEIS.

**Public Concern # 86:**

The current cumulative effects analysis is not sufficient. It directly borrows from the Forest Plan cumulative effects analysis, which was not specific to this project and these action alternatives. The analysis of cumulative effects to wildlife, including (Neotropical) migratory birds, should be more substantive and specific to the effects of the range of alternatives under analysis. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Additional information is presented in the FEIS in Section 4.8.8.

**Public Concern # 87:**

The wildlife analysis in DEIS Chapter 4 rarely connects with the data provided in Chapter 3. McIver and Starr report notes in one of their conclusions: "Postfire logging normally removes a great percentage of large dead woody structure and thus has the potential for significantly changing postfire habitat for wildlife (Lindenmayer and Possingham 1995, 1996). These changes include "structural" effects, such as reduction in insect populations that serve as food for various wildlife species." (Blake 1982, Saab and Dudley 1998, Sallabanks and McIver 1998). (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 88:**

The fact that the Forest Service is proposing only to harvest dead trees does little to mitigate the ecological impact, as the dead trees in a post-burn landscape are absolutely critical to recovery. They have value in providing wildlife habitat, retaining moisture and nutrients, and acting as a recolonization agent for decomposers and other important micro-fauna. (Individual, Las Cruces, NM - #5)

**Forest Response to Public Concerns # 87 and #88:**

We agree that dead trees are an important ecosystem component. The proposed action and alternatives have been designed to maintain this component. The designs are in compliance with Forest Plan Guides G16 and G17 for snag and down woody material retention within treatment units. G17 was developed to ensure adequate down woody material for retaining moisture and nutrients, and acting as a recolonization agent for decomposers and other important micro-fauna. When the fire is viewed as a whole, snags and down woody material far exceed the guideline requirements. Of the 8,379 acres of mature forest that burned on National Forest and private land, 6,884 acres would remain untreated. These untreated acres are estimated to contain 100+ snags per acre. (See DEIS Table 4.8.4 on page 4-43.) Therefore, the EIS concludes that the extensive post-fire untreated area provides more than enough post fire wildlife habitat for species dependent on that habitat.

**Public Concern # 89:**

In addition to formal consultation, we ask the forest to please include a more rigorous analysis of effects to lynx denning habitat that includes detailed data and analysis to support the conclusions made. The analysis should include data and numbers representing the loss of denning habitat due to temporary road construction as well as the preventative non-salvage commercial harvest of green mature and old growth Engelmann spruce. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Public Concern # 90:**

With respect to lynx, simply removing the acres of low intensity burn that are proposed for harvest (279 a., Alt 2; 229 a., Alt. 3) and that are important habitat for lynx makes profound ecological sense and is consistent with the best available data. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Public Concern # 91:**

It is also not clear if the analysis of affects to lynx habitat accounts for the 719 acres of salvage that is planned for the private lands located inside both LAUs in the project area. The EIS should be sure to include the effects of this commercial logging in combination to the proposed public land logging in all analysis related to Lynx. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Biological Assessment addressed the Lynx Conservation Strategy and Forest Plan Standards for potential lynx denning habitat and found that adequate habitat remains within the Lynx Analysis Units affected, including unburned patches of mature and old conifer stands within the burn perimeter and outside of the perimeter. The U.S. Fish and Wildlife Service returned a Biological Opinion concurring with a finding of may affect, but not likely to adversely affect in the Biological Assessment (USDI 2004). Tables 4.8.2 and 4.8.3 in the EIS do not include private land in either the total acres or the acres affected by the burn since "Conservation measures will generally only apply to Federal land within Lynx Analysis Units" under the Lynx Conservation Strategy. Therefore, in determining acres of habitat available in the LAU and affected by activities, only National Forest land was included. However, a Biological Assessment prepared by the Forest Service identified the 719 acres of salvage harvest on private land as a cumulative effect. Summaries of these effects contained in the B.A. are included in the FEIS.

**Public Concern # 92:**

The Forest is required by 36 CFR 219.19 to monitor populations of all native and desirable non-native species to ensure that adequate habitat and viable populations are maintained. The 1983 USDA Departmental Regulations 9500-4 provides further direction to the Forest Service that expanded the viability requirements to include plant species. This is a project that proposes to directly manipulate and remove the major structural components of wildlife habitat, alter slope stability and change the vegetative cover. Before doing this significant action, the Forest needs to demonstrate that the proposed action will not reduce native and desired nonnative populations of flora and fauna to less than the minimum viable populations. Pursuant to USDA Departmental Regulations 9500-4 wildlife monitoring activities will need to be conducted to determine if you are meeting (and will still meet) population and habitat goals for all existing wildlife and plants in the area. Included with this, the Forest needs to monitor the populations and habitat for amphibians. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

36-CFR 219.19 (a) (1) "In order to estimate the effects of each alternative on fish and wildlife populations, certain vertebrate and/or invertebrate species present in the area shall be identified and selected as management indicator species and the reasons for their selection will be stated. These species shall be selected because their population changes are believed to indicate the effects of management activities." The species selected, as Management Indicator Species in the Wasatch-Cache Revised Forest Plan were the "northern goshawk, snowshoe hare, beaver, Colorado River and Bonneville cutthroat trout. Additional information has been included in the FEIS addressing MIS at the Forest and project level. Please also refer to response to Public Concern #96.

**Public Concern # 93:**

The footprint left from temporary roads (even after re-contouring) and open forest structure created by the proposed action will result in significantly increased snow compaction from snowmobile use that is sure to last for many decades. These direct and indirect affects to snowshoe hare and integrity of the lynx habitat are insufficiently disclosed and analyzed in the cumulative effects analysis. One example is that the proposed action does allow some ground-bases skidding in violation of S1. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

An addendum attached to the original BA addresses specific standards listed in the LCAS. Temporary roads within salvage units will not provide any snowmobile access that is not already possible due to the lack of vegetation obstructing travel. There is a total of about 1 mile of temporary road outside of salvage units under the proposed action accessing units 2, 4, 7, 18, 23, and 24. These units are already accessible by snowmobile. The U.S. Fish and Wildlife Service returned a Biological Opinion concurring with a finding of may affect, but not likely to adversely affect in the Biological Assessment. There are short slopes within some of the salvage units that exceed 40%. These can and will be avoided by skidding machines. They are short enough that trees can be felled on to gentle ground or cable winched to the machine. This skidding will not be in violation of S1.

## Fisheries

**Public Concern # 94:**

The DEIS admits that the analysis of the cumulative effects to Colorado River and Bonneville cutthroat trout was taken from the Forest Plan. This is not indicative of site-specific analysis. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Forest Plan analysis dealt with viability of BCT and CCT. This was done at the 6th level hydrologic unit. Cumulative effects though identified in the Forest Plan are site specific, and will be clarified in the FEIS.

**Public Concern # 95:**

Conditions found in the fish samples consistently indicated that there are reasons for concern because the 2003 fish samples appeared to be less fit than samples from the late 1990s. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

Condition factors (K) calculated in 2003 were not consistently lower than those from previous years. Only two sites had changes in condition factor greater than 5% which is the threshold identified in the Forest Plan. These two sites include Boundary Creek, where K values have varied from 0.99 (1994), to 0.90 (2003), and the lower reach of North Fork Mill Creek, where K values have varied from 0.94 (1994) and 1.06 (2003). In regard to Boundary Creek, increased numbers of BCT were captured in 2003 and would likely explain changes in K.

**Public Concern # 96:**

The listing of mitigation measures and project design criteria for the two action alternatives does not appear to adequately address habitat and viability of amphibious wildlife, and there is a dearth of analysis addressing current populations to determine if there even are viable populations. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

An initial survey has been done for boreal toads and chorus frogs. Boreal toads are found outside of the project area and chorus frogs are found in the project area. These species are closely correlated to riparian areas for all of their life stages, and the mitigation and design identified in the two action Alternatives should provide adequate protection. Boreal toads have been found in the EFBR, and appear to be unaffected by the fire, with several egg masses and numerous tadpoles found in 2003. Mitigation and design identified in the two action alternatives should provide adequate protection for metamorphs, tadpoles, and eggs. Boreal toad adults are less likely to utilize the burned areas due to reduced shading, increased temperatures, and reduced food sources. Boreal toad adults traveling through cutting units may be vulnerable to crushing, but this is a relatively small part of the watershed.

## SocioEconomics

**Public Concern # 97:**

Even the logging industry and related jobs account for only 0.5% of jobs in Uinta County, WY, a fact not pointed out in the DEIS economic analysis. Put simply, there is no compelling benefit to justify this project, except for the logging contractor that gets the contract. (Individual, Las Cruces, NM - #5)

**Forest Response:**

The offering of timber for sale is part of the multiple use role of the National Forest. Timber harvest is consistent with the Wasatch-Cache National Forest Revised Forest Plan goals and management area direction.

**Public Concern # 98:**

Mainly missing is a better explanation of the benefits and costs to the Forest Service. A summary table is presented that indicates that Alternative 2 provides the most financial benefit to the Forest Service, but because the detail is not shown it is impossible to analyze the numbers. For instance, how much does recovery of the temporary roads cost? How much does road reconstruction to bring some roads to BMP standards cost? How much will inspecting all equipment for cleanliness cost? Because these numbers are not presented, the DEIS seems to be inconsistent. Why is the money from 9,716 ccf enough to reconstruct 22 miles of road, but the money from 6,012 ccf is enough to reconstruct only 8.9 miles of road? Page 2-20 states that all unit marking, layout, road closures, construction, reconstruction, maintenance, and harvesting would be monitored by Forest Service representatives. Is this all included in the economic analysis? The economic design viability presented on p. 2-12 is all about the viability of logging, but not the viability of the sale to the Forest Service. (Individual, Sandy, Ut - #6)

**Forest Response:**

All of the costs referred to in the comment are included in the analysis, as are the costs of road construction and reconstruction. These costs are considered in appraising the value of the sawtimber. We have tried to better display them in the FEIS. The miles of road maintained under the alternatives is determined based on the roads that will be necessary to haul the timber, not the volume of timber offered. There also was an error in the DEIS that omitted 5.8 miles of the North Slope road that would receive pre-use maintenance in Alt. 3 (Table 4.5.2). This has been corrected in the FEIS. We have reworded the discussion of reconstruction in the FEIS to more accurately display the actions proposed. Road reconstruction as defined in 36 CFR 212.1 refers to activities that result in an increase of an existing road's traffic service level, expands its capacity, or changes its original design function (improvement), or results in a new location of an existing road or portions of an existing road (realignment). The proposed road actions are designed to

bring the roads up to standard for their maintenance level and design standards, not improve or realign the roads. Therefore, they are more accurately described as maintenance. This change has been made in the FEIS.

**Public Concern # 99:**

The DEIS economic analysis is very poor. It ignores non-market resource values and what people outside the local community consider the economic value of the area. We'd pay at the toll booths. And we'd likely pay again for quality experiences at the trail head if there were no roads up ahead to spoil the walk. (Individual, Salt Lake City - #8)

**Public Concern # 100:**

The economic analysis does not consider the non-market driven resource values. Value should be given to recreation and tourism expenditures which contribute to the local and regional economy. (Individual, Park City, Ut - #11)

**Forest Response to Public Concerns #99 and #100:**

The Forest Service is required to prepare a financial efficiency analysis for all sales expected to exceed \$100,000 in appraised value (FSM 2432.12). We completed the financial analysis for these sales, even though they will not all meet the value criterion. Economic analysis of the management of the Forest is completed at the Forest level, as part of the forest planning process. Section 4.11.2 discusses the analysis method used for financial analysis.

**Public Concern # 101:**

The economic analysis seems quite skewed to the miniscule .5% of county jobs associated with logging related jobs in Uinta County. Where are the other economic values which are so obvious to other forest studies? (Individual, Forest Lake, Mn - #9)

**Forest Response:**

Please refer to Chapter 4, section 4.11 for a discussion of the financial analysis.

**Public Concern # 102:**

The socioeconomic analysis does not meet the identified issues. It does not even attempt to address non-market issues on a qualitative basis. The DEIS states that it has done that in each specific resource section. Show us. There is not even an attempt to analyze socioeconomic values outside of the self defined local area of southwestern Wyoming. The last labor statistics for the area involved show that "Ag. services, forestry, fishing, & other" account for only 0.5% of the labor market in Uinta County, Wy (Wy Economic Analysis Division, 2001). A PNV analysis does not reveal real costs associated with this proposal, thus one sees the distorted view of the no action alternative that has few costs associated with it harboring the largest negative PNV. No timber sale costs will be incurred. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

Large scale economic analysis is beyond the scope of this project, and is addressed in the Forest Plan. What we display in this analysis is the economic efficiency of the proposed timber sale(s) (Chapter 4.11). The discussion in Chapter 3 is focused on the area adjacent to the forest, in Summit County, UT and Uinta County, WY. We have tried to improve the presentation of the data in the FEIS, and eliminated the planting cost from the No Action alternative. The PNV includes the costs of sale preparation, administration, temporary road construction and obliteration, road maintenance and post-sale activities. These costs are better explained in Chapter 4.11 of the FEIS.

**Public Concern # 103:**

It is simply absurd to constrain the economic benefits to the Bridger Valley, Wy and to spread the costs across the forest. It appears the real reason for the level of analysis is noted in a paragraph in the Final EIS for the Forest Plan Revision, February 2003, related to Uinta County's request for cooperating agency status. The DEIS (3-97) states this: "Ranching, timber, oil and gas and recreation users in Uinta County are very interested in long term planning and project activities on the Wasatch-Cache. Many long-term

residents are concerned that possible changes to general multiple-use opportunities will deleteriously affect desirable traditional lifestyles and the local economy. It is a strongly held belief among these people that there are trends towards restriction of ongoing land uses, that this trend has been apparent for the last 20 years, and that the trend is undesirable and threatens their interests." Hardly a project specific analysis! And we guess only those local Bridger Valley, WY folks are granted the authority to hold strong beliefs and have them acted upon by the Wasatch-Cache National Forest. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

There was no intent to confine the economic benefits to Bridger Valley. Chapter 3.14 discusses the affected area adjacent to the project area, which encompasses both Uinta County, WY and Summit County, UT. The benefits from the timber program may or may not accrue to the local area, depending upon the location of the mill that purchases the timber and the crews that do the work. Information relevant to this discussion was taken from the Forest Plan, because it describes the economic environment and collecting such detailed information at the project level is beyond the scope of this analysis.

**Public Concern # 104:**

We request that the Forest include and analyze detailed quantitative data pertaining to current recreation, hunting, fishing, and service related jobs in addition to logging related jobs in Northern Utah and South-Western Wyoming. This analysis should be site specific and original. The current analysis in chapter 4.11.1-3 relies completely on a re-statement of the forest-wide analysis contained in the Forest Plan. In addition to a listing of the numbers of individual jobs involved, we request that the Forest also clearly display those numbers in terms of a percentage of the total economies. For example, timber related jobs in Uinta County, WY account for barely 0.5% of total jobs in the county ... a very small portion of the economy. Since economic resilience is mentioned in the purpose and need, we also request that these job related numbers be analyzed in terms of their contribution to the economic stability and resilience of the affected economies of northern Utah and Southwest Wyoming. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The type of analysis requested goes beyond what can be completed at the project level. The large scale economic analysis is more appropriately conducted at the forest scale. We have completed the required financial efficiency analysis for the project and presented the results in Chapter 4. We have expanded this information in the FEIS to better address the questions raised in comments on the DEIS.

## General

**Public Concern # 105:**

We are also deeply troubled by the way the widely recognized Beschta report has been used in the DEIS. By only including the seriously misplaced and deeply simplistic statement by the Chief of the Forest Service as to why a scientific report prepared by leading ecologists should be ignored and not the formal response to the Chief's statement from the scientists who authored the report, the Wasatch tipped its proverbial hat and discredited not the Beschta report, but the integrity of the forest. We are enclosing that response and requesting that you include it in the FEIS and on the forest web site as part of the DEIS. (Preservation/Conservation Organization, Hyrum, Ut - #15)

**Forest Response:**

The Beschta Report was not ignored in the analysis. We recognize the importance of the recommendations and have considered them in the analysis. The recommendations in that report are presented along with how this analysis addresses them in an appendix to the EIS. We have included the response in the FEIS.

**Public Concern # 106:**

The substantive implications of the Beschta report are not mentioned in the analysis of the affected environment of in the analysis of the environmental consequences. Since the report directly speaks to the effects of the actions alternatives, we recommend that it be incorporated directly into the analysis found in chapters 3 and 4 of this site-specific environmental analysis. Why were the stronger design criteria and mitigating measures identified in Appendix J of the Lolo Forest Burn Final EIS dropped or watered down? (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The analysis evaluated the effects of the alternatives on the environment within the project area. The general principles presented by the Beschta report are important considerations and we felt the manner in which the project responded to them was best displayed in a separate section. The design criteria and mitigation measures were developed for the site-specific conditions in the project area and reviewed during on-site visits to the proposed unit locations by the ID Team during the summer of 2003.

**Public Concern # 107:**

Any careful reading of McIver and Starr will show that their research actually confirmed the Beschta et al. recommendations and found nothing that contradicted Beschta et al. For example, page 19 of McIver and Starr's report concluded that they "...found no studies documenting a reduction in the fire intensity in a stand that had previously burned and then been logged." Beschta's 2002 reply concluded that, "This is precisely the conclusion we made in our 1995 report." (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

McIver and Starr point out that no studies have examined how postfire logging alters future fire risk. However, they go on to say that "Work examining fuels on harvested green tree stands (Brown 1980) suggests that postfire logging may increase short-term fuel loads and fire risk owing to increased fine activity fuels, but reduce intermediate and long-term fire risk owing to removal of larger dead structure." They state that adaptive management is one way for managers to learn by doing and to reduce the uncertainty behind site-specific practices and prescriptions. Monitoring included as part of the decision will provide local information to future analyses.

**Public Concern # 108:**

We would like the EIS to fully disclose how much road improvement work related to public safety has been and will be done through BAER and other projects. Please also specify specific aspects that were not approved through BAER that the Forest still thinks needs to be done. Include a discussion that investigates the possibility that this work could be done via routine road/culvert maintenance, or other routine actions outside of this project. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Forest Service is not allowed to use BAER funds for pre-existing conditions (road improvement). BAER funds can be used to repair failed culverts and drainage and to install new culverts where they are identified as needed due to excess runoff from the fire. BAER funding is also limited to projects accomplished within two years of fire control. The BAER report includes information on BAER projects and is included in the Project File. Projects such as replacing old log culverts that are still functioning adequately but are likely to fail in the future, decommissioning of road #80299 and changing the access route to Lym Lake are outside of BAER funding limitations. New sources or potential sources of sedimentation from inadequate drainage have been discovered as time passes since the fire. Some of the drainage dips that were installed using BAER funding are too sharp too allow safe and reasonable passage of vehicles and need to be modified. Although much of this work would be accomplished under the ongoing maintenance program, the proposed action allows a source of funding to get it accomplished sooner.

**Public Concern # 109:**

The DEIS is an inadequate site-specific environmental analysis that does not fulfill the mandates set by NFMA and NEPA. Because large quantities of the site-specific analysis from the Lolo National Forest Post Burn Final EIS were copied into this DEIS, we believe that this analysis fails to meet the standards for site-specific analysis set by NFMA and NEPA. (Preservation/Conservation Organization, Salt Lake City, Ut - #16)

**Forest Response:**

The Lolo National Forest Post Burn Final EIS was used as a template for the East Fork Fire EIS. Each resource specialist used information from that EIS if it applied to the East Fork Fire Salvage. That information is being reviewed again as part of the response to comments and review of the analysis of the alternatives.

## EAST FORK FIRE SALVAGE EIS RESPONSE TO AGENCY COMMENTS



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

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Ref: 8EPR-N

Mr. Thomas Tidwell  
Wasatch-Cache National Forest  
8236 Federal Building  
125 South State Street  
Salt Lake City, UT 84138

Mr. Stephen M. Ryberg  
District Ranger, Evanston Ranger District  
1565 Hwy 150 South, Suite A  
P.O. Box 1880  
Evanston, WY 82930

Re: East Fork Fire Salvage, Draft Environmental  
Impact Statement (DEIS), CEQ# 030593

Dear Messrs. Tidwell and Ryberg:

Enclosed with this letter are comments from the U.S. Environmental Protection Agency, Region 8 (EPA), for the Draft Environmental Impact Statement (DEIS), East Fork Fire Salvage Project. EPA's review complies with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Our responsibility under NEPA and Section 309 is to evaluate the overall impacts to human and natural environments.

The DEIS identified significant environmental issues and adverse impacts associated with all alternatives, including: (1) soil erosion, soil disturbance, and soil compaction; (2) runoff and potential degradation of water quality and habitats in streams and affected reservoirs; (3) sedimentation of streams and water-storage reservoirs; (4) fish and wildlife impacts to sensitive species; and (5) the potential to establish and spread noxious weeds.

EPA'S DEIS Rating

Based on the procedures EPA uses to evaluate the potential effects of proposed actions and the adequacy of the information in the DEIS, alternatives in the document are individually rated. The detailed justification for these ratings is enclosed as "EPA's Detailed Comments." The Preferred Alternative (Alternative 2) involves 4.9 miles of temporary road construction and the 856 acres of salvage timber harvest. We rated the Preferred Alternative "EC-2" (environmental concerns, insufficient information) under EPA's ratings criteria (enclosed). The rating means that the Alternative does not require substantial changes, but EPA identified environmental impacts that should be avoided to fully protect the environment. The rating was based on the Preferred Alternative's potential adverse impacts to water quality and aquatic and terrestrial resources, discussed in the DEIS. The potential for significant environmental degradation can be reduced by modifying the Preferred Alternative or by selecting the Agency-identified Environmentally Preferred Alternative. The "2" rating means that the DEIS lacked sufficient information to thoroughly assess environmental impacts and mitigation that should be avoided to fully protect the environment. The lack of quantified estimates of erosion and the impacts from stream sedimentation cause concern about the potential impacts to streams and aquatic life and about whether certain areas may be further impaired by harvesting activities.

Alternative 3, the Environmentally Preferred Alternative is rated "LO" (lack of objections). We noted that Alternative 3 excludes new road construction and harvests 648 acres of salvage timber. Overall it appears to cause fewer adverse environmental impacts than Alternative 2, addresses the goals and objectives in the Purpose and Need statement, and includes the same activities as Alternative 2 to protect the environment (e.g., tree planting, spraying of noxious weeds, and decommissioning some existing road to reduce erosion and protect water quality).

Should you have any questions regarding these comments, you may contact Brad Crowder of my staff at (303) 312-6396 or at [crowder.brad@epa.gov](mailto:crowder.brad@epa.gov). I can be reached at (303) 312-6004.

Sincerely,

Larry Svoboda  
Director, NEPA Program  
Office of Ecosystems Protection and Remediation

Enclosure

**EPA DETAILED COMMENTS  
EAST FORK FIRE SALVAGE  
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

## Forest Service Responses

### Overall Comments

Of the alternatives that partially meet the Purpose and Need, we recommend Alternative 3 or some expansion of that alternative. Although it provides less than two-thirds of the salvageable volume compared to Alternative 2, it could be completed with significantly smaller overall adverse impacts to forest resources and ecosystem services (as outlined below), and presumably with greater economic efficiency because of no need to construct and then obliterate temporary roads.

The DEIS did not identify and evaluate an alternative that attempts to get a similar amount of timber production from areas accessible with existing roads, and presumably Alternative 3 accesses the feasible acreage and volume that can be harvested without additional road construction.

Based on the description of Alternatives and their Environmental Consequences, Alternative 3 appears to have the fewest adverse environmental impacts. We recommend that the Forest Service select the Environmentally Preferred Alternative as the Preferred Alternative. We appreciate attempts to minimize new road construction and to limit the salvage sale proposals in ways that both minimize the ecological harm that occurs naturally after fire and sustain those beneficial processes resulting from fire.

### Soil Erosion and Sediment Losses

The document identifies substantial erosion and stream sedimentation following the East Fork fire. We did not note quantified estimates of soil erosion that could be compared for the Alternatives. Intuitively, we expect that harvesting on steep grades and erodible soils will increase soil erosion and sediment losses, and thus make it more difficult to protect soils for soil health and integrity, forest and tree health, and the Forest's aquatic and terrestrial resources.

Alternative 2 includes 4.9 miles of new road construction and later obliteration, while Alternative 3 includes no new road construction. We recognize that high runoff and erosion rates usually are associated with road construction and reconstruction. The DEIS notes mitigation that will be employed to minimize those impacts, but the significance of erosion and sediment losses from roads remains a concern. EPA recommends quantified estimates of erosion be included along with sediment losses in the Final EIS.

We also recommend that new road construction be eliminated or reduced to the extent possible as the Final EIS and timber sales proceed. In addition to significantly reducing erosion and sediment losses, other benefits such as reduced establishment and spread of noxious weeds will be realized by restricting the project to lands accessed with existing roads.

The Deciding Official will weigh the benefits and environmental costs based on the analysis of the alternatives including Alternative 3, No Roads, in making a Decision.

The project record contains documentation of all the WEPP modeling done for the analysis. This documentation reports both erosion losses from the prism structure of the road, as well as sediment leaving the modeled roadside buffer strip. We agree that results of this modeling indicate that road related erosion and sediment is a concern with Alternative 2. This concern is what prompted the requirement of sediment filtering mitigation practices for roads that did not have sufficient buffer width to prevent sediment delivery to streams in the area.

A summary of estimated sediment yields for each alternative is presented in tables 4.1.10 and 4.1.11. The sediment yield from temporary roads is shown to be the same for a 10-year and 50-year annual storm. These results seem unlikely. Please explain why these results are the same or correct the results in the Final EIS. A further incongruous result is the lower overall sedimentation per acre that would result from Alternative 2 compared to No-Action, despite the additional temporary road impacts.

The document states on page 4-12 that Alternative 1, No Action, would have no effect on water quality resources because there would be no salvage logging. However, the results in tables 4.1.10 and 4.1.11 indicate higher erosion rates under No Action than under either of the action alternatives. These and other results could be better explained in the Final EIS. Intuitively EPA expects that greater overall erosion and sedimentation are likely with greater temporary road construction and greater harvested acreage, and that soil erodibility and runoff in the long run are more likely to be greater in areas where harvest takes place than in undisturbed areas, absent significant erosion and sediment control practices.

We recognize that the Forest Service sedimentation modeling uses the best available information and professional judgement to analyze runoff and sediment losses. We also note, however, the limitations of those models, the professional judgement required to use them, and the lack of opportunity to validate the results of those models for burned areas because of the lack of existing science and monitoring data. We recommend that the Forest Service consider peer review of the model assumptions and parameter estimates by independent academic or government experts. By having a thorough peer review, greater confidence in the assumptions and results would be beneficial for this and future harvest projects in burned areas.

EPA recommends that there be substantial monitoring of erosion and sediment losses from harvest areas. Monitoring should continue over a period of time to respond to unforeseen impacts. A coincident benefit of modeling can be to validate the modeling results for future modeling projections in other projects. With careful evaluation of the post-harvest impacts in harvested and unharvested areas of the burned area, the proposed project can contribute to the understanding of post-fire processes, including their effects on soil erosion and regeneration of vegetation. As a result of this project and monitoring, we can expect future management actions to have greater certainty about the immediate and long-term impacts to forest resources.

The reason why the values for sediment yield for temporary roads are the same in Tables 4.1.10 and 4.1.11 is that the WEPP model only models road erosion for the 50-year annual storm and doesn't model a 10-year annual storm. DEIS section 4.1.3.3 provides a discussion of modeled sediment yields from proposed roads in terms of low intensity (10 year) and high intensity (50 year) storms. When considering erosion and sedimentation effects in the project analysis area, it is important to remember that existing sediment and erosion are a result of a wildfire and that the area is not "undisturbed". These conditions were modeled, analyzed, and disclosed in DEIS section 4.1.2.2. It is also critical to note that sediment yields in DEIS tables 4.1.10 and 4.1.11 are stated in terms of average rates on a per acre basis. The proposed action and alternatives have lower sedimentation values because they include mitigation that will reduce sedimentation compared to existing conditions. Despite the modeling results, we agree that road related erosion and sediment is still a concern with Alternative 2. This concern is what prompted the requirement of sediment filtering mitigation practices for roads that did not have sufficient buffer width to prevent sediment delivery to streams in the area (DEIS section 4.1.3.3).

The DEIS (section 4.1.2) discloses, as part of the analysis, Forest Service consultation with the WEPP model applications project leader at the Rocky Mountain Research Station-Moscow Forestry Sciences Laboratory. The WEPP model has been peer reviewed. DEIS section 4.1.2 and Table 4.1.1 discloses the results of site specific sediment monitoring conducted after the 2002 East Fork Fire. These results validate the sediment yield effects predicted for the no action alternative by the WEPP model. DEIS section 2.4.2 describes a similar regimen of monitoring that will take place before, during, and after the proposed activities.

We agree with your recommendation. DEIS section 2.4.2 describes a program of soil and water related monitoring that will take place before, during, and after the proposed activities. In 2003, the Forest Service installed a number of erosion monitoring plots to assess the effects of the East Fork Fire. Because of their location, these plots can also monitor the effects of the proposed activities. We believe these generally encompass the points of your suggested monitoring.

### Aquatic Resources

Based on the substantial erosion likely in areas with steep slopes and erodible soils, and the difficulty to mitigate adverse impacts to water bodies, EPA recommends that the Forest Service consider prohibiting timber harvest in areas that have high erosion rates and will contribute greater sediments to affected streams and aquatic resources.

Evaluation of impacts that alternatives may have on water quality and aquatic life – primarily aquatic habitat, insects, and Colorado River cutthroat and Bonneville cutthroat trout – indicated that there are substantial risks that fire poses to streams. Those risks are greater particularly during the first three to five years following a fire. The DEIS notes that road building is expected to produce the highest increase in stream sedimentation (page 4-50) and can affect fish and amphibians. Given these conclusions, the FEIS should consider the following questions:

- While the DEIS notes the possibility of greater risks to aquatic life, will the burn be likely to impair designated uses for affected streams?
- Could environmental stresses associated with each alternative impair designated uses in streams, compared to No Action?

EPA recognizes the difficulty in establishing management and species thresholds. However, the DEIS is unclear whether the proposed mitigation practices will negate or reduce impacts to an extent that protects aquatic resources that are affected by the burn and the proposed timber salvage harvest.

In the Final EIS and ROD, please provide a monitoring plan that in part will monitor surface hydrology throughout the project period and during the period of recovery from the burn and harvesting activities. We understand that monitoring plans generally are applied for many years following a project and include adaptive management provisions to protect water quality and aquatic resources. There is substantial uncertainty associated with both natural and altered landscapes following fire, and quantitative estimates of adverse impacts will accordingly be subject to uncertainty. Because the East Fork fire led to landscape-level hydrologic changes, streams will have greater peak and total flows and will carry more sediment to receiving streams for several years. Despite the fire's significant impacts, it offers an opportunity to better understand the effects of fire and of the salvage sale on aquatic and terrestrial ecosystems and water supply storage, and it gives the Forest Service the ability to take corrective actions that can minimize unexpected adverse impacts to natural resources.

The DEIS considered prohibiting timber harvest as part of the no action alternative. DEIS Tables 4.1.10 and 4.1.11 disclose that for both low and high probability storm events, soil erosion rates for the majority of treatment units in the no action alternative are the same or slightly higher than the rates for the proposed action.

DEIS section 3.4.11 discloses that the streams in the area fully meet their beneficial uses. DEIS section 4.1.3.3 reports observations on runoff and sediment yields to streams within the analysis area following the East Fork Fire. This section reports that, for the no action alternative, there were very short term (2 hours) temporary effects on streams as a result of observing runoff following thunderstorms. At the time the DEIS went out for review, water samples that were taken to determine the effects of the fire had not yet been analyzed. The analyses have now been completed. Water quality samples were collected on Mill Creek just below the project area on May 27, 2003 during a storm event. These samples were analyzed for chemical, nutrient, and metals and the analysis results showed that no exceedance of state water quality standards occurred. From this information it is expected that no impairment of beneficial uses will occur from the fire although temporary decreases in water quality may occur during short-term thunderstorm events. Text has been added to FEIS section 3.4.11 to clarify this point.

Under a discussion of cumulative effects in Section 4.1.3.3, the DEIS discloses that erosion and sediment related effects of the proposed action are not expected to increase in comparison to the no action alternative. Because of this, there would be no impairment of beneficial designated uses from the action alternatives over and above that which could occur under existing conditions.

Through the implementation of best management practices (BMPs), Forest Plan Fisheries Goals, Standards and Guidelines (Figure 3.12.3), and mitigation (Table 4.9.1), this project may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species, regardless of the Alternative chosen (Table 2.7.9). The DEIS also indicates that the two action alternatives would result in a slight reduction in sedimentation rates to streams when compared to the No Action Alternative (Table 2.7.9).

DEIS section 2.4.2, and figure 2.4.2, disclose an extensive plan for monitoring the effects of the proposed action. These include the effects of erosion, sedimentation, and other aspects of surface hydrology.

**Wildlife Impacts**

We appreciate the description of impacts to affected wildlife, particularly sensitive or rare species. The DEIS notes unmitigated, adverse impacts from the action alternatives to individual animals – northern goshawk, great gray owl, woodpecker spp. (three-toed and Williamson’s sapsucker), songbirds such as evening grosbeak, and pine martin. The greatest adverse impacts to wildlife habitat and individuals will occur from the Preferred Alternative, with corresponding reductions in adverse impacts with the Environmentally Preferred Alternative and No Action.

We are concerned with the DEIS’s description of adverse impacts to wildlife habitat and to individuals of threatened, endangered, proposed, and sensitive species. We appreciate the commitment, in the DEIS, to resolve wildlife concerns in consultation with the U.S. Fish and Wildlife Service (FWS). The DEIS notes that adverse wildlife impacts can be lessened by limiting the harvested acreage and by staying out of areas that have been relatively undisturbed.

We would appreciate clarification in the Final EIS that biological surveys will be conducted in the burn area and adjacent areas prior to implementation of a chosen alternative. During FWS consultation for listed and/or sensitive species, please use FWS protocols to establish the appropriate areal extent and other conditions for nest-site or other buffer zones to properly protect and manage those species.

**Noxious Weeds**

The DEIS recognized that the spread of noxious weeds is possible as a result of proposed logging operations and operations on nearby private lands. Prevention and early control of noxious weeds may avoid or minimize adverse impacts on vegetation, biodiversity, water quality and fisheries.

The DEIS noted that noxious weeds already are established along roads and trails in the burn area. Noxious weeds are likely to have a greater presence in the burned area since the fire because of the disturbances caused by and related to the fire. Salvage logging is likely to cause expansion of those weed species. Therefore, the potential to spread noxious weeds argues for less land disturbance.

Practices mentioned in the DEIS, including equipment washing, monitoring, and management are not likely to be as effective as preventing further disturbance of burned areas. For areas that will be harvested, EPA commends the Forest Service for its mitigation measures, e.g. in Section 4.6.5.

Cumulative impacts from the establishment and spread of noxious weeds, to affected ecological and economic resources, should be noted in the Final EIS.

There are models available to map the expected spread of noxious, weedy plant species, and those can be considered here or in future projects where proposed actions have the potential to cause significant long-term resource degradation.

Those species known to potentially occur within the proposed project area are listed on Table 3.11.6. Those species found within the proposed project area have been surveyed. During the past year, suitable habitat has been surveyed for goshawks within the project area boundary and covered about 1400 acres (3-69). Many three-toed woodpeckers were located within the project area during surveys conducted the summer of 2003 (3-71). The U.S. Fish and Wildlife Service returned a Biological Opinion concurring with a finding of may affect, but not likely to adversely affect in the Biological Assessment.

Project clearance surveys will be conducted prior to implementation. If any species protected under an authority are discovered the district Biologist will mitigate measures and/or coordinate efforts with Fish and Wildlife Service to determine actions.

Revegetation success plots are established throughout the East Fork Fire Area.

These plots are used to help determine if natural revegetation is occurring and to detect new infestations of noxious weeds. No new infestations of any noxious weeds have been recorded in the monitoring process. The current noxious weed program combined with the added mitigation of monitoring the salvage units, for early detection and eradication of new infestations(of noxious weeds) would greatly reduce or eliminate any impacts.

### Fire and Fuels Accumulation

The DEIS notes positive impacts of salvage harvest for reducing fire risk and fuels accumulation. Further explanation of the science used would be helpful in the Final EIS to resolve some contradictions that are associated with logging versus natural recovery. Previous Forest Service projects describe post-fire principles that allow for natural recovery. These principles preserve the capability of species to naturally regenerate and to help avoid actions that may impede the natural recovery of disturbed systems. Previous timber salvage DEISs by the Forest Service resulted in many comments that question scientific evidence regarding whether salvage logging is an effective way to reduce fire fuels or if reducing fuels reduces the severity of the impacts from catastrophic fires. We are unaware of scientific literature that indicates harvesting burned trees will significantly reduce the risk of future fires, that burned areas are appreciably at greater risk of ignition, or that burned areas have similar risks for the spread of fire compared to unburned areas.

The DEIS does not indicate that salvage operations occur significantly in private land / public land interface zones. The National Fire Plan directs that fire prevention be focused on those areas most at risk for future fires. The maps indicate where salvage harvest may occur in places that potentially could affect structures and infrastructure (primarily roads), but it would be helpful if the EIS described how the Fire Plan direction is incorporated in the proposed salvage sale and how successful the proposed actions will be at suppressing future fires and their impacts

The proposed actions presumably will remove larger, marketable trees and possibly create a more single-story stand structure over time. Therefore, in the longer term and absent subsequent thinning activities, is it likely that proposed actions can create a greater risk of fire?

If subsequent thinning is necessary to reduce the risk of fire, its ecological and economic impacts should be evaluated. If the proposed project requires such thinning activities, will the proposed actions adversely impact economic benefits of increased salvage sales and wildlife habitat, and perhaps other environmental resources?

The EIS does not claim that harvesting burned trees would significantly reduce the risk of future fires or that burned areas are appreciably at greater risk of ignition. However, it can help reduce the intensity and severity of the fire in salvaged units and can help fire crews to contain a fire by providing locations where a more effective fire break can be constructed if a fire occurs. Brown, et al (2003) describe the effects of coarse woody debris on fire intensity and resistance to control of reburns. High severity fire is unlikely in the first 10 years after the first fire but the likelihood (assuming an ignition) increases over subsequent decades. It begins to decrease when larger diameter fuels decay and are incorporated in the duff layer.

The National Fire Plan plan provides some general guidance, but because of its emphasis on drier forest types, it does not provide specific guidance for the East Fork Fire Salvage. Applicable portions have been retained, but text has been edited in the FEIS to clarify the relationship. Where beneficial aspects of the fire such as aspen regeneration, they are noted throughout the EIS.

This analysis makes no decision with regard to thinning, because such activities would not occur for several decades. The MPC for most of the fire is 5.1, which emphasizes maintaining or restoring forested ecosystem integrity while meeting multiple resource objectives. If the fire had burned over suitable lands, we would assume thinning before the regenerated stands reach 20 feet in height, in accordance with objectives of producing sawtimber. In that case, the cost of thinning would be included in the PNV. However, with the management direction of MPC 5.1 not emphasizing timber volume, thinning is more problematic. Thinning to maintain ecosystem integrity would be equally likely with any alternative. Therefore, thinning was not included in the PNV. If thinning is determined to be necessary in the future, analysis and NEPA documentation will be prepared at that time. The proposed salvage sale will not remove any green trees.

The unburned areas will not be entered, and where the fire burned through stands with low intensity, only the groups of dead trees will be harvested. Therefore, multi-storied stands where the structure was not modified by the fire will retain a multi-storied structure. Over most of the salvage area, however, development of a single-story stand structure is an inevitable result of the fire, with or without harvesting due to the extensive mortality of the trees within the units. Stands that burned at low intensities and have surviving green trees will develop into a multi-storied structure more quickly, because the green trees will be retained. But for most of the harvest units, it will take many decades to develop a multi-storied structure. The need to thin stands harvested under this decision will depend upon stand development and management objectives several decades in the future. The effects of the treatment on future fire are presented in Chapter 4.7.2.

### Potential Insect Infestation of Trees

The expected impacts from all alternatives on insect predation from Mountain Pine Beetle and Spruce Beetles are noted to be minimal. Reduced insect infestation was presented as a benefit of the proposed actions. However, the Environmental Consequences Section 4.6.2 seems to minimize that benefit and hence did not substantiate or quantify that potential benefit. Please clarify for decisions to be made from the Final EIS that beetle infestation and impacts are likely to be insignificant (or significant), if that is the conclusion from the analysis.

### Roads and Transportation

We understand that the 4.9 miles of new, temporary roads necessary for the Preferred Alternative will be reseeded, re-contoured, and obstructed for access upon completion of the project. The Final EIS should indicate that those activities will occur as part of closure. Closure of any new and reconstructed roads at the end of the project will minimize their adverse impacts in areas where forest and ecosystem health will benefit from closure.

Improvements to the existing road system, while having travel-related benefits, can encourage increased travel in motorized vehicles compared to the before-project conditions. The DEIS did not indicate the potential for increased legal and illegal use of both official and unofficial roads and the resulting long-term, cumulative impacts to fish and wildlife and their habitats, noxious weed dispersal, soils, and fire risk, related to human activities in the Forest. Improving classified roads and constructing new roads is likely to lead to additional motorized use on those roads and elsewhere.

Additional logging traffic on county and state roads also may have some safety and other impacts to affected communities. Measures that can protect the driving public, including logging truck drivers, may include Forest Service road closures where needed and appropriate. Any measures that could reduce or prevent potentially serious accidents should be considered. Any information on public safety that can provide greater protection against accidents would be helpful prior to initiation of logging activity. The DEIS does not describe whether there are significant concerns about public safety associated with increased logging truck traffic on area roads and highways. The number of logging trucks per day that can be expected, statistics on highway or logging road safety, and foreseeable safety risks should be noted. Measures such as posted warning signs on Forest and area roads may be proposed to minimize accident risks.

This issue was raised during scoping and appeared to warrant analysis in the early stages of the project. This did not appear to be a major concern, but was carried forward in the analysis. As the analysis was conducted, it became apparent that we did not have large areas of fire-stressed trees in the accessible portions of the burn, and the surrounding stands are generally mixed species rather than continuous spruce-fir or lodgepole pine. Therefore, we concluded, and displayed in the DEIS (refer to Chapter 4.6.2), that there is relatively little risk of an outbreak, and that the alternatives would have little effect on insect outbreaks. This has received less emphasis in the FEIS.

Temporary road closure methods and timing are included in the DEIS, and will be carried forward to the FEIS. Refer to DEIS Chapter 2, page 2-17, Temporary Road Construction.

The manner in which the road work was described in the DEIS lead to confusion about the level of work being proposed. We have tried to clarify this in the FEIS, because no improvement or relocation is planned. The work would involve maintenance to keep roads at their design level. No new permanent roads are being constructed under any alternative.

All existing roads have been built to accommodate logging and recreational traffic and are used on a regular basis for truck traffic. We anticipate no additional problems as a result of this project. We have added more discussion on roads to the FEIS.

### Socioeconomic Impacts and Financial Efficiency Analysis

The DEIS does not fully consider all socioeconomic impacts, both benefits and costs, to the community in its evaluation of "financial efficiency" and "economic efficiency" (page 4-54). That efficiency is based solely on revenues and costs of the proposed timber sale in table 4.11.1. Socioeconomic impacts are important to fully compare alternatives, if economic efficiency is an important decision criterion.

Dispersed and other recreation in the burned area was noted to have been significant prior to the fire (pages 3-94 to 3-95), but not quantified. Recreation probably is important to the livelihood and quality of life for area communities, though the relative importance of recreation-related activities also was not quantified. Community impacts that could have been quantified to better understand the importance of Forest recreation and management include: outfitters revenues and activity, expenditures and visitor days by recreating residents and visitors, revenues and employment in the lodging and food industries, the Forest's camping fees, and so forth.

Based on the absence of those economic impacts, the financial and economic efficiency analysis ignores both the community impacts that are associated with logging and resulting impacts to recreation revenues, and the potential benefits and costs for recreation that may be associated with each of the proposed alternatives. That information should be disclosed for fully-informed decision-making regarding the overall socioeconomic impacts of the proposals.

The intermediate and long-term impacts to vegetation and its associated visual / aesthetic, game and wildlife habitat, and other values which affect recreation and visitation are not discussed in the DEIS. For example, will harvest activities improve or harm hunting, scenery viewing, and other recreation opportunities in the future?

Alternatives require some closure of recreation facilities and trails to campers, hunters, and other recreationists. Based solely on information in the DEIS, losses of net benefits and revenues from recreation in areas temporarily closed to harvest timber may be several million dollars. In light of the annual recreation revenues that will be lost, the economic efficiency analysis (table 4.11.1, actually a financial efficiency analysis that excludes broader socioeconomic impacts to the Forest and the affected communities) should clarify the following questions:

- o Does the financial efficiency analysis include all Forest Service costs and revenues that differ for each Alternative?
- o Do the costs and revenues include the Forest Service's costs to mitigate and monitor for the impacts from harvest activities?

The Forest Service is required to prepare a financial efficiency analysis for all sales expected to exceed \$100,000 in appraised value (FSM 2432.12). We completed the financial analysis for these sales, even though they will not all meet the value criterion. Economic analysis of the management of the Forest is completed at the Forest level, as part of the forest planning process. Section 4.11.2 discusses the analysis method used for financial analysis. Salvage of dead trees will not adversely affect existing recreational opportunities beyond the effects of the fire. No developed campsites are within the proposed sale, although some dispersed campsites were burned over during the burn. The effects on recreation are a result of the fire, not the proposed activities. This is displayed in Chapters 4.2 and 4.10.2. We have tried to clarify this in the FEIS.

Effects on scenic resources are discussed in Chapter 4.2. Chapter 4.10 discusses the effects of the alternatives on recreational use patterns. No alternative requires closing of any recreation facilities or trails.

The "Sale Detail" for the two action alternatives indicates that "Total Road Maintenance" for Alternative 2 is about \$60,000 (table 4.11.2) and for Alternative 3 \$36,000 (table 4.11.3). Similarly, the financial efficiency comparison of Alternatives (table 4.11.1) shows Alternative 2 loses \$9,400, compared to a slightly larger loss of \$20,700 for Alternative 3. The cost differences for road maintenance between Alternative 2 and 3 is less than \$24,000. Do these costs and efficiencies also include the cost of construction and obliteration of 4.9 miles of new temporary roads under Alternative 2? From the description it is unclear, but if the costs of new temporary road construction and obliteration are not included in the financial analysis, please incorporate them in the Sale Detail tables and in the financial efficiency comparison table.

All of the costs referred to in the comment are included in the analysis, as are the costs of road construction and reconstruction. These costs are considered in appraising the value of the sawtimber. We have tried to improve the display of them in the FEIS. The miles of road maintained under the alternatives is determined based on the roads that will be necessary to haul the timber, not the volume of timber offered. There also was an error in the DEIS that omitted 5.8 miles of the North Slope road that would receive pre-use maintenance in Alt. 3 (Table 4.5.2). This has been corrected in the FEIS.



United States Department of the Interior

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February 19, 2004

ER 04/27

Stephen M. Ryberg  
Evanston-Mountain View District Ranger  
Wasatch-Cache National Forest  
1565 Highway 150, Suite A  
P.O. Box 1880  
Evanston, WY 82931

Dear Mr. Ryberg:

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the East Fork Fire Timber Salvage Project, Evanston Ranger District, Summit County, Utah, and offers the following comments.

General Comments

We recognize the need to reduce the potential for uncharacteristic wildfires and insect epidemics by removing selected fire killed or dying trees. We support surveys to assess the abundance of sensitive species prior to the initiation of project work as well as the design of buffered treatment areas and post project monitoring. In particular, we commend the commitment to identify and protect northern goshawk nesting sites within the project area by curtailing harvest activities in nesting areas (p. 2-11) as well as maintaining lynx foraging habitat and open road density. These measures should work toward minimizing short and long-term effects of resultant habitat modification.

The project area consists of vegetation suitable for lynx habitat. Down logs are an important component of den sites, and extensive salvage logging could result in a loss of denning potential, particularly if large trees are removed. The Lynx Conservation Assessment Strategy (LCAS) recommends retention of a substantial amount of coarse woody debris in a variety of size classes for denning and foraging habitat. The LCAS is utilized to assess and implement federal land management projects in lynx habitat, as part of a Conservation Agreement between the Forest Service and the Fish and Wildlife Service. The final EIS should identify how the project meets the intent and recommendations of the LCAS.

A Biological Assessment prepared by the Forest Service addresses how this project meets the intent and recommendations of the LCAS and meets specific standards listed in the LCAS and can be found in the project folder. The U.S. Fish and Wildlife Service returned a Biological Opinion concurring with a finding of may affect, but not likely to adversely affect in the Biological Assessment.

We have concerns regarding proposed logging activities in close proximity to streams inhabited by Conservation Agreement species Bonneville cutthroat trout in Mill Creek and East Fork Bear River (UDNR, 1997a), and Colorado River cutthroat trout in West Fork of Blacks Fork (UDNR, 1997b). Increased sedimentation could have detrimental effects to these fish populations, and is particularly a concern along sections with steep and/or unstable hill slopes.

Increased roadage and logging activities will have negative impacts to the environment and wildlife. Road construction increases habitat fragmentation, noise disturbance, soil compaction, and stream sedimentation. Road construction creates, also, barriers to wildlife movement. Any efforts to avoid road construction and/or to close or restore temporary roads are recommended.

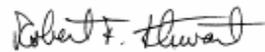
In addition, roads may facilitate snowmobile and other human uses in the wintertime. Snow compaction on roads or trails can aid competing carnivores access into lynx habitat where they would otherwise be impeded by snow depth. Logging traffic in the summertime through denning habitat may also have negative effects on lynx. We recommend road construction be analyzed in terms of the LCAS, and include analyses of cumulative effects from all existing and proposed roads in the action area.

Noxious weeds will have greater potential to invade with increased road traffic and soil disturbance. Therefore, we support use of practices to minimize the potential for introduction of non-natives and the DEIS listed measures to avoid and/or control invasive plant species (p.2-10). We recommend the use of native seed for any revegetation activities.

Vegetation treatments should be timed to avoid nesting and breeding seasons for goshawks and other migratory birds. Vegetation treatments from early spring through late summer (April - August) would have the highest potential for deleterious effects to migratory birds including physical destruction of active nests, eggs, and nestlings. Actual nesting months are species-specific and should be more clearly defined following species survey efforts or based on known forest species distribution information.

We appreciate the opportunity to provide these comments. If you need further assistance, please contact Kate Schwager, Fish and Wildlife Biologist, at the Fish and Wildlife Service Utah Field Office at (801) 975-3330 ext.132.

Sincerely,



Robert F. Stewart  
Regional Environmental Officer

#### Literature cited

Utah Department of Natural Resources (UDNR), Division of Wildlife Resources. March, 1997a. Conservation Agreement and Strategy for Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*). Publication Number 97-19. Web address: <http://www.wildlife.utah.gov/pdf/bnvcutt.pdf>

Utah Department of Natural Resources (UDNR), Division of Wildlife Resources. March, 1997b. Conservation Agreement and Strategy for Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*). Publication Number 97-20. Web address: <http://www.wildlife.utah.gov/pdf/cocutt.pdf>

Mitigation is identified for both action Alternatives to reduce sediment inputs to streams. Table 2.7.9 illustrates that both Alternative B and Alternative C will both have lower sediment yields than Alternative A. Each unit was field reviewed and the slope and vegetative cover was taken into account when identifying how close the harvest unit could be to adjacent streams. This review was done with the forest's fish biologist, hydrologist and soil scientist.

No new permanent road construction is proposed. Temporary road closure methods and timing are included in the DEIS, and will be carried forward to the FEIS. Refer to DEIS Chapter 2, page 2-17, Temporary Road Construction.

Road densities by LAU are listed in Table 3.11.4 and meet recommendations for open road density.

Mitigation measures for noxious weed control are listed in Chapter 2 of the EIS. The Forest has been using native seed mixes as a standard practice in recent years. Native seed will be used in reclamation efforts as outlined in guideline 22 of the WCNF Revised Forest Plan.

Operating seasons generally are limited to the period between mid-June and early December. Project clearance surveys will be conducted prior to implementation. If any species protected under an authority are discovered the district Biologist will mitigate measures and/or coordinate efforts with Fish and Wildlife Service to determine actions.