

# MOOSE POST-FIRE PROJECT

## *Final Environmental Impact Statement*

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**LETTERS FROM GOVERNMENT OFFICIALS OR AGENCIES**

**GLOSSARY (WITH ACRONYMS AT THE END)**

**REFERENCES**

**AGENCIES, ORGANIZATIONS, AND PEOPLE RECEIVING THE FEIS OR SUMMARY DOCUMENT**

**LIST OF PREPARERS - ACKNOWLEDGEMENTS**

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## **CHAPTER 4**

### **Response to Comments**

#### **I. INTRODUCTION**

This chapter documents the comments received following the publishing of the draft EIS for the Moose Post-Fire Project. We received 1407 comments from individuals, organizations, other government agencies, and elected government officials. Each comment received was analyzed for its content and pertinence to the project. All relevant public concerns were captured in the content analysis process described below.

##### ***Content Analysis Process***

We documented and analyzed all public comments related to the draft EIS using a process called “content analysis,” which is a systematic method to compile, categorize, and capture the full range of public viewpoints and concerns regarding a plan or project. Content analysis helps the planning team clarify, adjust, or use technical information to prepare the final EIS. Information from public meetings, letters, emails, faxes, phone calls, and other sources are all included in this analysis. This process makes no attempt to treat comments as votes. Content analysis ensures that every comment is considered at some point in the decision process. A more detailed accounting of the content analysis methods used, results, and a comprehensive list of public concerns can be found in the project record. See F-485.

To analyze comments, a public “concern” list was created. This list identifies specific requests and common themes expressed by individuals and groups who responded to the draft EIS. To develop the list, each letter was read; comments were organized into subjects; representative quotations were selected from responses; and key ideas were distilled into statements that best capture the respondent’s sentiments in the form of an action the Flathead National Forest should consider pursuing. A response from the interdisciplinary team follows each concern.

**Demographics**

The demographic tables below show who submitted comments, where they live, their general affiliation with various organizations or government agencies, and the manner in which they respond.

**Geographic Representation**

Each response is tracked for geographic representation. Table 4-1 shows we received correspondence from 20 states and Table 4-2 displays the distribution of Montana comments between 10 counties. The geographic origin for 29 respondents was unknown.

**Table 4-1: Geographic Representation of Response By State**

State	Number of Respondents	Number of Signatures
Arizona	1	1
California	6	6
Colorado	2	3
Florida	2	2
Idaho	1	1
Illinois	1	1
Indiana	3	3
Massachusetts	1	1
Minnesota	4	4
Mississippi	2	2
Montana	1339	1369
New Mexico	1	1
New York	1	1
Oregon	2	2
South Carolina	1	1
Texas	3	3
Utah	2	2
Washington	3	3
West Virginia	1	1
Wyoming	1	1
Unidentified	29	29
<b>Total</b>	<b>1407</b>	<b>1436</b>

**Table 4-2: Geographic Representation of Response by Montana Counties**

County	Number of Respondents	Number of Signatures
Flathead	1,169	1,198
Gallatin	1	3
Granite	1	1
Lake	52	52
Lewis and Clark	4	4
Lincoln	32	32
Mineral	2	2
Missoula	70	70
Ravalli	3	3
Sanders	5	5
<b>Total</b>	<b>1335</b>	<b>1369</b>

**Organizational Representation**

We received responses from various organizations and unaffiliated individuals as shown in Table 4-3. Respondents include businesses, government representatives, environmental groups, and wood products industries and associations.

**Table 4-3: Number of Respondents/Signatures by Organizational Affiliation**

Organization Type	Number of Respondents	Number of Signatures
Business	2	2
County Government Agency/Elected Official	1	3
Federal Agency/Elected Official	2	2
State Government Agency	3	3
Wood Products Industry/Association	8	8
Unaffiliated Individual or Unidentifiable Respondent	1379	1405
Preservation/Conservation Organization	11	12
Unidentified Organization Type	1	1
<b>Total</b>	<b>1407</b>	<b>1436</b>

**Response Type**

Response types were tracked for each response received on the project. Responses were received in the form of letters, form letters, action alerts, and public meeting response forms, as shown in Table 4-4.

**Table 4-4: Number of Responses/Signatures by Response Type**

Response Type	Number of Responses	Number of Signatures
Letter	169	190
Form Letters	1,229	1236
Action Alert	1	1
Public Meeting Response Form	8	9
<b>Total</b>	<b>1407</b>	<b>1436</b>

**Organized Response Report**

Organized response campaigns represent 87 percent of the total responses received during the public comment period for the proposal (1,229 out of 1,407). These response campaigns generally fall into one of two categories: form letters and multi-signature responses (numerous signatures on one response).

**Table 4-5: Form Letter Descriptions**

Number of Signatures	Description of Form
1134	Calls for more access and more logging in the burn area.
92	Encourages the Forest Service to listen to requests from multiple use groups to leave roads open and log in the burn area.
10	Asks the Forest Service to leave Road 316 open.

Form letters are defined as five or more responses, received separately, but containing identical text. If a response does not contain all of the information in a given form, the response is entered as an individual letter. Table 4-5 summarizes the issues presented in the three form letters for this project and the number of letters received.

## II. RESPONSE TO COMMENTS

Public concerns were divided into three main themes:

1. Planning, Purpose and Need
2. Alternatives
3. Affected Environment and Environmental Consequences (includes separate resource areas)

Public comments express a distinct concept and represent identifiable concerns. Sample statements were selected for each public concern that best represent each distinct concept. In some cases, more than one sample statement was included to better capture the concern. Following the sample statements are a response to each concern from the Flathead National Forest interdisciplinary team.

### Planning, Purpose and Need

Public comments on the Moose Post-Fire Project's planning process focuses upon compliance with laws, regulations, and policies governing the stated purpose and need; clarification of the document's language and intent; adherence to public involvement and scientific analysis requirements; and provision for adequate monitoring of effects.

#### **#1 Public Concern: The Flathead National Forest should manage for natural, healthy forests.**

"The Moose Post-Fire Project should put wildlife and Big Creek's fish and water quality first in importance. While we appreciate some of the improvements in the DEIS as noted below, we remain concerned that because of the manner in which the Purpose and Need statement is written, the Forest is obligating itself, and taxpayers, to intervene significantly to alter natural processes. Nowhere in that statement do we see ecologically based objectives such as "Restore a healthy, naturally diverse forest ecosystem within the historical range of variation for the site." As a result, the inevitable solution becomes salvage logging (an unnatural event) and the "problem," fire, insects and disease (all parts of a healthy forest ecosystem). It seems to us that the Forest Service has repeatedly been down this road before, where human "wants" are placed ahead of ecosystem "needs." The result has been ever increasing criticism and conflict, and we urge you to adopt a different course in the Final EIS."

"As a native Montanan born and raised in Kalispell, and life long resident of Flathead County, I have seen lots of forest fires and personally witnessed the recovery of these areas. It has been my observation that logging and human attempts to "recover" forests only create more problems. Mother Nature works best and areas that are left alone recover best. The only appropriate restoration of burned habitat is tree planting and reduction of road sediment--no logging!"

**AND**

#### **#2 Public Concern: The Flathead National Forest should actively manage for forest health.**

"A well managed forest is a healthy forest" and that certainly is not the case in our forests. It is time to start putting people first again and let our loggers back in the woods."

"Whoever is in charge of all this should look for a new job because this is wrong the way they're handling this. And it's wrong to think that it happens so much to our lands. I think that things will hopefully start to change in the way that our forests are run because lately it hasn't been looking good. You would think that the Forest Service would be the first people there to stand up and protect our forest rather than be the first to destroy it."

“I understand this may mean nothing to the Godless Tree Hugging environmentalists, but Earth was created for man, not man for the earth. Let us manage carefully but correctly our renewable natural resources. Harvest the trees and promote economic and social efficiency in our nation.”

**Response:** As is noted in the comments displayed under #1 and #2 above, we hear diametrically opposing viewpoints everyday about how national forests should be managed. Our job is to balance human needs and resource values to serve people and care for the land.

**#3 Public Concern: The Flathead National Forest should not manage the Moose Post-Fire Project to avoid appeals.**

“I also don't believe the Forest Service should be willing to negotiate away portions of this proposal with environmental organizations as a means to address appeals.”

“The net result adds to an agency track record of diminishing output, increasing costs and loss of leadership respect in the natural resource arena. At some point the agency has to step up and out as proactive and cease being reactive to perceived conflict.”

**Response:** The decision made regarding this project will occur based on analysis, on-the-ground study, scientific recommendations, and public input; it will not be made to avoid appeals. This should be evident based on some elements of the project that have raised concerns from people with vastly differing viewpoints.

**#4 Public Concern: The Flathead National Forest should consider the concerns of the local public.**

“Please listen to the cries, pleas, and hearts of the locals. They count.”

“While I applaud some of efforts by the government to save our natural resources, I am disturbed by the idea of saving things at the expense of the local communities those resources are supposed to enhance. To me this is a matter of bad judgment on the part of bureaucrats and the Forest Service. I respectfully request that this matter be settled in favor of the local citizens who are in a much better position to determine the best way to make use of the resources in their area.”

**Response:** As required by federal law and regulations, the decision maker will consider and weigh all comments, including the public (both local and non-local), the planning team, other agencies, and scientists when making the decision. See comments 3 and 5 for further explanation.

**#5 Public Concern: The Flathead National Forest should not let special interests sway the project decision.**

“I urge you not to bow to timber special interests. Their main concern is corporate profits—not the health of the forests. It is sad to see that the greensies can have such a strong say. . . . There is no balance in this matter as of yet—the environmentalist have free reign on the issue.”

“I was disappointed to learn that the scoping comments by the multiple use community were so completely ignored and those of the environmentalists were not. I refer to the facts that: the DEIS contains alternatives for more road rip, which is high on the agenda of the greensies, than the scoping document; and instead of more timber harvest and less road rip, which all who desire multiple use access to forest resources would favor, the DEIS provides for less harvest and more road rip.”

**Response:** By its very nature, public participation brings out conflicting views—all of which are a “special interest,” and the more controversial or complex a project, the more varied the views we see. This project has proven to be highly controversial and complex. The National Environmental Policy Act (NEPA), requires public involvement, and helps identify issues and concerns. Alternatives are designed to cover the range of issues expressed during the comment period; a range of concerns and their effects on the social, economic, and environmental components of

an ecosystem. Analyzing issues and concerns provides the decision maker an opportunity to determine tradeoffs for selecting one alternative versus another.

#### **#6 Public Concern: The Flathead National Forest should make its decision quickly.**

“We urge you to move rapidly to a signed ROD. We congratulate the ID Team for a job well done in a suitable time frame. You have set a new standard for the timely analysis of significant issues using the NEPA process (completing an EIS) . . . We believe that the effects analysis of this DEIS clearly illustrates that the additional negative effects of salvage logging are not significant when compared to the negative first year post fire effects. This begs the question for a different analysis pathway that empowers rapid decision-making and authority to allow salvage and restoration activities to take place during the first fall and winter after a fire, or other significant disturbance event.”

“We appreciate the Forest Service staff efforts to expedite the environmental review process and to make a decision before the fire-damaged product loses its value completely.”

“I would like to begin by commending the Forest Service for producing this Moose Post-Fire DEIS in a quick timeframe. At the same time I believe the length of this environmental documentation process reinforces the need for the development of an abbreviated environmental analysis process to address catastrophic events like the Moose Fire. We cannot let this valuable timber resource deteriorate and go to waste while this lengthy environmental documentation process takes place. There are also some other aspects of this proposal that create some concern. The rapid decay rates of the fire-killed timber and beetle-killed timber makes it essential that this project proceed without any further delay to ensure that the salvaged trees are still merchantable. . . . The projected volume [is] to supply the Stoltze sawmill for almost 1 year and this volume would be generated from only 10.4% of the total acres that burned on Forest Service lands. Any further delay of this project will jeopardize the economic viability of these salvage sale projects.”

**Response:** Throughout the analysis process, we have adhered to the regulations set forth in the National Environmental Policy Act and other laws and regulations. We are working diligently to complete this EIS as soon as practical so that proposed activities may be implemented through sound and informed decisions that protect our resources.

#### **#7 Public Concern: The Flathead National Forest should extend the comment period.**

“We are requesting an extension of time for the comment period on the above-stated draft EIS. Due to our current work cycle involving the county budget and other county matters, we feel a 60-day extension period would be appropriate to further review the EIS.”

**Response:** We did not extend the comment period. From the outset of the project, we realized the need to complete the project in as timely a manner as possible to preserve the economic viability of merchantable trees. Extending the comment period another 60 days would preclude any logging this winter, which includes many acres within this project.

#### **#8 Public Concern: The Flathead National Forest should not amend its Forest Plan through the Moose Post-Fire Project.**

“Chapter 1, page 6, states, “The proposed action for this project would begin to change current resource conditions and trends towards meeting some of the desired future conditions for resources as described in the Moose Post-Fire Assessment summary document and the Forest Plan. Managing within the desired range of future conditions would achieve a balance on the landscape between resource values and human needs, and allow for healthy functioning of the ecosystem in the future.” This declares that the proposed action deviates from the existing forest plan where the “desired future conditions for resources as described in the Moose Post-Fire Assessment” override the current forest plan. Changes to the current forest plan should not be done in this matter because the forest plan is due to be replaced by a new forest plan in its entirety. The burn area should be treated as the current forest plan allows and not be changed to support the green agenda or environmentalist goals. You must follow your own rules just as the public does!

**Response:** The purpose of the Wildfires of 2001 Post-Fire Assessment (hereafter known as post-fire assessment) was to evaluate the primary concerns related to the post-fire effects on terrestrial, aquatic, and social ecosystem components in the area around the Moose Fire and other large-scale fires on the Flathead National Forest. This post-fire assessment was completed before we started on the analysis for the Moose Post-Fire Project DEIS. One of the objectives of the post-fire assessment was to identify Forest Plan guidance for management areas affected by the fires. The post-fire assessment did not supercede direction from the Forest Plan; instead it used direction from the Forest Plan to help provide a context for how potential post-fire management activities should or should not be proposed for further analysis. The Moose Post-Fire Project DEIS does not deviate from direction in the Forest Plan. Alternative 3 proposes two project-specific Forest Plan amendments that would temporarily modify two Forest Plan requirements regarding road decommissioning on specific roads. More details are contained in the project record.

**#9 Public Concern: The Flathead National Forest should revise its Forest Plan prior to its consideration of the Moose Post-Fire Project; the analysis of values for unroaded lands cannot be deferred until forest planning is complete in 3-5 years.**

The Flathead National Forest Plan is now beyond its 15-year life as specified under the National Forest Management Act. This analysis of values for these unroaded lands cannot be deferred until forest planning is complete in 3-5 years. Numerous court decisions have illustrated that logging is an irretrievable commitment of resources and this project clearly proposes to make just such commitments on nearly 1500 acres of unroaded lands. Therefore, deferral of analysis until forest planning is not appropriate since irretrievable commitments of the resource will have been made without adequate analysis under NEPA or NFMA.

**Response:** There is no special direction for management of these “unroaded lands”, as there is for inventoried roadless areas. The Flathead Forest Plan contains management direction for these lands. Salvage logging as proposed in the Moose DEIS in these lands is permitted by forest-wide and management area direction provided in the Forest Plan. An analysis of the characteristics of these lands was discussed on pages 3-279 through 3-281 of the DEIS, and is described in the FEIS.

**#10 Public Concern: The Flathead National Forest should not use the Moose Post-Fire Project to amend the Big Mountain decision.**

Forest Service should live up to its responsibilities and commitments under the Big Mountain EIS that provided for expanded development of the ski area. Some of the provisions in that decision required the closure and decommissioning of roads. The Moose fire should not be seen or utilized as an opportunity to modify the Big Mtn. decision until it has been fully implemented.

**Response:** The Moose Post-Fire Project is taking a comprehensive look at the road management situation for the upper portion of the Big Creek drainage. More road closures and decommissioning is proposed in all of the Moose action alternatives than what was involved in the Big Mountain project. The most well-known road closure under the Big Mountain decision is Road 316 (located directly on the backside of Big Mountain). Alternatives 2 and 4 do not propose changes to the existing closed status of Road 316 while Alternatives 3 and 5 propose to seasonally open the road while closing additional roads in the drainage.

**#11 Public Concern: The Final EIS should clarify how the Moose Post-Fire Project tiers to the Federal Wildland Fire Policy.**

It is also not clear how the proposal fits in with the Federal Wildland Fire Management Policy and Program Review (FWFMPPR). The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the FWFMPPR. The FNF should be integrating fire ecology into the Forest Plan by undergoing amendment of its Forest Plan in order to abide by the new fire policy. Moreover, it is not clear that the FNF fire plan has undergone NEPA analysis. That would guide project proposals such as this one.

**Response:** Amending the Forest Plan to incorporate the Federal Wildland Fire Policy and Program Review Policy is outside the scope of this project analysis. Implementing the FWFP will take a Forest-wide analysis to determine when and where fire use plans are appropriate. This is most appropriately analyzed in conjunction with the Forest Plan revision, currently in progress and scheduled for completion in 2006.

**#12 Public Concern: The Final EIS should disclose how much National Fire Plan funding has been secured for the Moose Post-Fire Project.**

The Lolo FEIS, at I-7, shows the Lolo secured over \$1 million in National Fire Plan money for road decommissioning and other watershed restoration work in its Post-Fire Project. How much Fire Plan money did the Flathead secure for such work on the Moose Post-Fire Project?

**Response:** We used no National Fire Plan money to support the Moose Post-Fire Project. We have been approved for about \$3 million over a several year period for activities unrelated to the EIS or road decommissioning that include reforestation, revegetation with native plants, road maintenance, trail restoration, mushroom harvest management, weed inventory and control, and environmental education. Current status of this funding is uncertain because of the money withdrawn for firefighting expenses in 2002.

**#13 Public Concern: The Flathead National Forest should use income from timber harvest to offset project costs.**

It is unfair that the total cost of administering these burned areas be put on us taxpayers when some income could be derived from prudent harvesting of timber.

**Response:** The Moose Post-Fire Project would generate jobs and income through salvaging timber, planting, associated timber management activities, and road decommissioning, as described in the DEIS, page 3-290 and 3-291, and in the FEIS. Depending on the alternative chosen, the amount of income generated from timber harvest would vary.

**#14 Public Concern: The Flathead National Forest should compensate Flathead County for its involvement with the Moose Fire.**

Take the money saved by not obliterating roads and pay the county for fighting the Moose Fire. The USFS spent a lot of money not fighting the fire—it is only right that the people who were serious about stopping the fire be paid.

Pay the county for the fire expenses.

**Response:** Reimbursement for firefighting efforts is controlled by regulations and policies that are set at a national level, and are well beyond the scope of this project-specific decision.

**#15 Public Concern: The Flathead National Forest should separate the decisions for road decommissioning and salvage operations; the Forest should also make a separate decision for the salvage logging of the inventoried roadless areas.**

Make a separate decision on the salvage logging activities outside of these inventoried roadless areas and seek an Exemption from Stay during the 105-day Administrative Appeal period—the ground based and skyline logging must take place this fall and winter. Make a separate decision for the proposed road reclamation actions and require a supplemental EIS and a forest-wide programmatic EIS to elucidate the true direct, indirect and cumulative effects of road reclamation on the human environment.

Road reclamation and motorized use decisions should be handled separately from the decision on the salvage harvest proposal. The salvage and beetle population issues are time-sensitive, while the road and appropriate use issues can be decided later after the immediate fire effects have abated.

Decisions on road decommissioning and motorized use should be handled separately from the decision on the salvage harvest proposal. Timeframe for action on the salvage issue is much shorter than that needed for the road issues. The social and environmental issues associated with road decommissioning and closures are much more complex and politically charged than those associated with salvage operation. By combining the two decisions, the agency has unnecessarily jeopardized an opportunity to quickly and efficiently respond to the need for immediate salvage of fire-killed timber. While the commitment under Amendment 19 is clear, the urgency for compliance with that commitment is not the same as that necessary for successful salvage of fire killed timber.

We suggest you suspend making a decision on this proposed action and conduct a separate analysis on this issue to elucidate the significant issues associated with grizzly bear security and illustrate the significant and cumulative effects of road reclamation on the human environment.

Make a separate decision for the salvage logging of the inventoried roadless areas.

**Response:** The fire occurred in two grizzly bear subunits that do not currently meet Forest Plan grizzly bear security requirements. We are directed by Amendment 19 of the Forest Plan and terms and conditions in the USFWS biological opinion on A19. Neither is discretionary. This project must proceed toward meeting those objectives or a “taking” grizzly bear habitat will occur, which is a violation of the Endangered Species Act.

**#16 Public Concern: The Flathead National Forest should recognize that cumulative effects from road decommissioning and salvage operations managed together are greater than if they are temporally separated.**

Cumulative effects, especially with respect to water quality and fishery issues, of both commercial fire salvage and extensive road decommissioning are likely much greater than if each action was taken separately. For example: if one were to allow for immediate timber salvage on a time frame that recognizes the real loss of value of fire-killed timber over time, and then allow sufficient time for reforestation and natural processes to mitigate sediment and soil movement concerns within the fire area prior to initiating extensive road decommissioning activities, the cumulative effects of short-term impacts from timber harvest activities would not compound the impacts associated with road decommissioning.

**Response:** Chapter 3 of the DEIS and FEIS disclose cumulative effects of all alternatives for pertinent resource areas. Also see response to comment #15.

## **Alternatives**

This section includes comments suggesting changes to alternatives, new alternatives, or mitigation measures. It also contains support for one or more of the proposed alternatives.

**#17 Public Concern: The Flathead National Forest should select Alternative 2.**

I like your clear exposition of the present conditions and what your agency desires the conditions to be in the future. I believe your Alternative 2 will overcome the problems you believe are likely to happen and create the conditions you desire in the project area.

I support Alternative 2 of the Moose Creek Post-Fire DEIS. This alternative seems to allow for salvage logging while still protecting the core roadless areas and meeting the road density standards for the area.

With these [specified] concerns, we reluctantly supports at a minimum Alternative 2.

We support road decommissioning, and believe Alternative 4 is environmentally preferable, but suggest that a modified preferred alternative may best balance and optimize environmental and resource management trade-offs. . . . We understand that the local public is sensitive to issues such as road access and salvage of merchantable burned timber, and other issues. It may be

reasonable, therefore, to consider a modified alternative that includes elements from other alternatives in order to better balance or optimize the environmental and resource management trade-offs.

**Response:** Comments regarding these two alternatives (2 and 4) will be considered by the decision maker.

**#18 Public Concern: The Final EIS should incorporate certain travel management proposals from Alternative 5 in the preferred alternative.**

(2-41), Alternative 5: "The main difference is that Alternative 5 would restrict motorized access year long via gates and berms on the Hallowat Road 315 and the Moose Lake Road 5207, which would allow Big Creek Canyon Creek Road 316 to be open for part of the year." This would be a good addition to Alternative 2 if the seasonal closure of 316 does not make it.

**Response:** These comments will be considered by the decision maker.

**#19 Public Concern: The Final EIS should establish different objectives for Alternative 3.**

(Page 2-25), Alternative 3: Objectives are unacceptable.

**Response:** We developed Alternative 3 to address several issues raised by the public during scoping. Page 2-25 of the DEIS begins the discussion of these issues. As mentioned in comment #5, the alternatives within the EIS present issues from differing viewpoints, all of which are considered in the analysis process. This alternative offers the decision maker the opportunity to see and compare the tradeoffs between Alternative 3 and the other alternatives within the EIS.

**#20 Public Concern: The Flathead National Forest should select Alternative 4.**

I feel Alternative 4 is by far the most promising in terms of overall effectiveness for the long term protection of the integrity of this area. Unfortunately, I fear this alternative will not go far enough. The proposed 87 miles of road decommissioning is the absolute minimum. I think that the Big Creek road should be managed according to Amendment 19 and be closed. I also consider the 300 foot RHCA [Riparian Habitat Conservation Areas] on all streams is a minimum. The 31 miles allotted for the decommissioning of snowmobile trails is a minimum, particularly since my long-term property ownership and recreational use of the area indicates that snowmobile use far exceeds that which is legally permitted.

I am so skeptical of salvage as a treatment or prophylactic for possible bark beetle outbreak or infestation that I do not see an alternative I could support. Since you will be conducting salvage under some arrangement regardless of my opinion, however, I will say that I would lean toward Alternative 4 as being the least damaging among the action alternatives to most interests and values on the project site. That alternative, however, has features that make it less appealing in some respects.

Alternative 4 gives the environment the greatest consideration, thus deserves implementation with minor changes further enhancing the environment for future generations.

**Response:** Comments supporting Alternative 4 will be considered by the decision maker.

**#21 Public Concern: The Flathead National Forest should consider the extent to which road closures are politically feasible.**

(3-21): "Implementation of this alternative (4) would decommission 87 miles of road in the big Creek drainage, leaving eight miles of road open year-round and 23 miles open seasonally." While this is preferable action for the GB is it politically feasible?

**Response:** Managing road systems on national forests in general, and within the Flathead National Forest in particular, has become very controversial. The road management activities of this project have generated the most comments and discussion in the letters received on the DEIS. The alternatives provide several road

decommissioning options for consideration by the responsible official. In addition, the analysis in the EIS displays the effects of road management changes on the social, economic, and biological components of the environment.

**#22 Public Concern: The Flathead National Forest should select an alternative that closes and decommissions at least as many miles of road as Alternative 4.**

We favor the total mileage of road closure/decommissioning proposed in alternative 4 (see DEIS S-13) (provided that effective closures/decommissioning techniques are employed) or an alternative with more mileage of road closure/decommissioning (provided that effective closures/decommissioning techniques are employed) and encourage the FS to choose such a roads management alternative in the ROD. Added protection for grizzlies, bull trout, ungulates, wolverines, and other wildlife is needed due to the impacts of past logging and road building combined with impacts of the recent Moose Fire. . . . The excessive mileage of roads, motorized routes, skid trails and other access routes in this area is a serious concern. . . . The action alternatives consider decommissioning roughly half of the routes in this area or less (DEIS 2-49; DEIS 3-27). The Forest Service should consider decommissioning additional routes.

**Response:** Comments supporting Alternative 4 will be considered by the decision maker.

**#23 Public Concern: The Flathead National Forest should acknowledge that it will not select the No Action Alternative.**

The no action alternative is almost never chosen by the FS in the FNF. If the FS disagrees with this, we would like for the FS to disclose the number of times the no action alternative has been chosen over the current plan period and the total number of decisions that have been made during this period.

**Response:** Section 1502.14(d) of NEPA regulations requires the alternatives analysis in the EIS to "include the alternative of no action." The no action alternative is a viable alternative for the decision maker to select; in addition, the no action alternative also provides a baseline to compare against other action alternatives.

**#24 Public Concern: The Final EIS should analyze in detail an alternative that would not create any openings greater than 40 acres.**

An alternative that limits cutting to 40 acres or less should have been considered. There was no reason for eliminating this option (DEIS 2-45).

**Response:** As stated on page 2-45 of the DEIS (and again in the FEIS), the Moose Fire created large areas of fire-killed forest that will remain in an open condition for some time. Salvage of dead trees will have no effect on the open character of the area that was created by the fire. Further, there is no regulatory framework limiting fire salvage to 40 acres.

**#25 Public Concern: The Flathead National Forest should develop and select an alternative which proposes a range of resource protections with minimal disturbance.**

The Native Forest Network does support non-commercial, science based restoration such as the Conservation and Local Economy Alternative that was developed as part of the Bitterroot National Forest's Burned Area Recovery Plan. As you may know, the Conservation and Local Economy Alternative would have provided the best path towards long-term watershed restoration while employing local people to do the restoration work. We urge you to develop, select and implement a similar plan for the Moose Creek Post Burn Area.

The DEIS seems to analyze background conditions and impacts from the proposed action as though fire-caused impacts are somehow tied to the proposed harvest. The Forest Service should change language throughout the document to clearly identify that the existing post-fire regime, and impacts from that regime, are background. The proposed harvest is not a mitigation measure to fire, but a proposed action that will cause short-term and possibly long-term impacts to water quality, fisheries, and other resources. This underscores the need to consider restoration activities independently of harvest activities. Alternative 4

attempts to look this way, but does not go far enough to allow readers to sufficiently analyze post fire conditions/impacts and proposed actions.

The DEIS does not examine a reasonable range of alternatives. For example, all of the action alternatives involve a narrow range of options confined to the range of: thousands of acres of logging, hundreds of acres of skyline and ground based logging, hundreds of acres of logging in inventoried and/or uninventoried roadless areas, tens of millions of board feet of commercial extraction, and (nearly) similar road closure/decommissioning methods with little variation (DEIS S-5 and 6; DEIS Soils and Watershed sections; DEIS S-21). For example, no alternatives are offered that significantly decrease (or eliminate) the commercial logging throughout the area and in roadless areas. And no alternatives are offered that more stringently or effectively decommission and close roads. We do not believe the no action alternative fulfills this role, because the no action alternative does not address the pressing watershed restoration needs in this area. . . . The SN stated that the FS is "exploring a range of options to speed up the planning process" (SN 1). The FS could more effectively do this by putting forward an alternative that immediately repairs damaged ecosystems and undoes the damage of previous logging and road building rather than controversial and [destructive] proposals, such as logging in burned forests, roadless areas, and important wildlife habitat as is proposed in each of the action alternatives in the DEIS. . . . An alternative should be fully analyzed that precludes all road construction and salvage logging and instead focuses on watershed restoration via road obliteration and sediment source reduction on reclaimed roads.

The DEIS does not include a "restoration alternative" that analyzes the impacts, and costs, of restoring the burned area, including road removal and appropriate bug protection not based on harvest. This alternative would allow the agency and public to truly take a hard look at the proposed action and no-action alternative.

**Response:** Several of your requests were included in the alternatives. For instance, no salvage harvest in inventoried roadless areas was an issue used to develop Alternatives 3 and 4, and more road decommissioning and road closures was an issue used to develop Alternative 4. As to your request for a "restoration alternative", we did consider evaluating it as a fully developed alternative. Our reasons for not further studying this alternative were described in the DEIS on pages 2-43 and 2-44, and are also addressed in the FEIS.

Many aspects similar to the Bitterroot's "conservation and local economy" alternative are addressed in this EIS and in other restoration actions that are being conducted outside the arena of this EIS. We did not feel that we needed to address this in another separate alternative since some features of the alternative are outside the scope of our project or other features of the alternative have already been incorporated into the project. In addition, we received a very similar comment during scoping (see above), and we addressed this "restoration and rehabilitation" request as an alternative considered but not fully developed. A discussion of this "conservation and local economy" alternative is in Chapter 2 of the FEIS in the section called "Alternatives Considered but Not Given Detailed Study."

According to the responder, the purpose of this "conservation and local economy" alternative is to "improve the protection of homes from wildfire; insure the healthy recovery of the burned area; and allow fire to play its natural role in the forest ecosystem." The first feature of this alternative is to protect homes from wildfire through education and thinning trees in close proximity to homes. There is very little private property in or near the project area. Although the proposal includes some fuel reduction treatments, it is only a relatively small proportion of the management actions being proposed - about 200 acres in three areas, including a campground, an environmental education center, and adjacent to private property. In addition, responses to comments #194 and #195 provide rationale for thinning beyond the immediate proximity of structures.

The second feature of the suggested alternative is to allow burned areas to recover through natural means, eliminating cattle grazing in burned areas, eliminating and rehabilitating roads, protecting watersheds, planting trees, and preventing and controlling weeds. The no action alternative proposed no timber salvage. The action alternatives propose salvage harvest on less than 7% of the burned area located on the national forest (approximately 35,000 acres). Another large portion of the burned area is found in Glacier National Park (approximately 26,000 acres) and will not be salvaged. Two of the action alternatives do not propose salvage in inventoried roadless areas. There are no cattle grazing allotments on national forest system lands within the burned area. Decommissioning roads is a feature in all of the action alternatives. Road rehabilitation is currently being done in the Big Creek drainage through an ongoing BMP Project, which is repairing road drainage problems and upsizing culverts to meet INFISH specifications. Approximately 1000 acres of trees have already been planted within burned

plantations and more acres are planned over the next several years. Weed populations have been monitored this summer and will be treated under the direction of the Flathead National Forest Noxious and Invasive Weed Control Decision Notice (May 2001). To reduce risk of noxious weed establishment and spread via our proposed actions (DEIS, page 2-12), washing all off-road equipment will be required. Actions needed to protect watersheds from the effects of the fire were done immediately after the fire; these actions included aerial seeding, placing straw wattles on severely burned areas, cleaning road ditches, constructing drain dips, and upgrading culverts. Additional watershed rehabilitation treatments and monitoring of the effectiveness of the completed work have been continuing this year.

The final feature of the “conservation and local economy” alternative is to integrate fire into the ecosystems by adopting and implementing the Federal Wildland Fire Policy on the Forest. We have responded to this issue in comment #11.

**#26 Public Concern: The Final EIS should include an alternative that protects roadless areas from development and motorized intrusion.**

The analysis should examine impacts to potential wilderness designation of roadless areas in the project area. And the FS should examine whether even the no-action alternative would not lead to development of the area and include a pro-active alternative that protects the roadless areas from development and motorized intrusion. As two recent court rulings have shown, the no action alternative does not necessarily answer the question of whether the roadless areas will or will not be developed. (See National Audubon Society v. U.S. Forest Service, 21 E.L.R. 20828, 20830 (D. Ore. 1990).) In the recent court case regarding the development of the Trail Creek Roadless Area, Judge Hatfield ruled that the Forest Service was incorrect in arguing that by offering a no action alternative within the Trail Creek EIS NEPA would be satisfied in terms of providing an alternative which would not develop the roadless area.

**Response:** There are no proposed wilderness areas in or adjacent to the Moose project area. In addition, Alternatives 3 and 4 do not propose any management actions within inventoried roadless areas.

**#27 Public Concern: The Final EIS should analyze alternatives providing increased logging and road access.**

All of the alternatives for action on the Moose Fire are unacceptable. I was appalled as I read the DEIS and saw the low volume of logging that was to be allowed.....In the array of alternatives, there appears to be missing a prudent and professional alternative that excludes the limitations of past similar efforts and focuses on the real short term and long term needs of the public and the Moose Creek Fire resource base. This alternative should have: Treated more acres for harvest; Increased salvage volume in response to insects, volume and value and future conditions including fire risk; Created a better and larger road access system for future management needs; Placed sediment (bull trout) and roads (grizzly) in a more realistic and less over-conservative context. By not having an aggressive management alternative proposed, you have compromised resource potential, marginalized your own professional abilities and deprived the public of optimum economic, social and environmental benefits.

I believe that the Moose Fire DEIS does not comply with the National Environmental Policy Act (NEPA) requirements because: Despite public scoping input criticizing the initial proposal of 4300 acres of salvage out of 35000 as inadequate, no alternative is considered that expands salvage efforts, instead the maximum salvage area examined in the DEIS is reduced to 3700 acres. The Flathead National Forest violated the Administrative Procedures Act in preparing the DEIS by making arbitrary and capricious decisions. The decision to not examine in detail an alternative salvaging more than 4000 acres was arbitrary and capricious.

**Response:** The alternatives described in the DEIS and FEIS were developed with full knowledge of the post-fire conditions in the Moose Fire area. Please see Alternative 7 (DEIS, pages 2-44 through 2-46; and the FEIS), which proposed more salvage acres and describes the rationale for not fully evaluating this alternative.

**#28 Public Concern: The Final EIS should include an alternative which proposes no road decommissioning.**

I believe that the Moose Fire DEIS does not comply with the National Environmental Policy Act (NEPA) requirements because, despite public input during the scoping process and despite the fact there is no legal requirement forcing the Flathead NF to link road decommissioning to burn rehabilitation, no alternative is examined which excludes the road decommissioning (destruction) and focuses only on the burn rehabilitation.

**Response:** See response to comment #15.

**#29 Public Concern: The Final EIS should retain the range of alternatives considered in the Draft EIS.**

I commend the Forest Service for the good range of alternatives presented in the DEIS.

**Response:** Thank you for your comment.

**#30 Public Concern: The Flathead National Forest should develop a range of alternatives each of which fully addresses the Purpose Of and Need For Action.**

The three issues under the Purpose Of and Need For Action section of the DEIS are not fully addressed under any of the alternatives.

**Response:** We believe that the alternatives do address the purpose of and need for action. The responder provided more comments in their letter that elaborated on this perspective. Our responses to those comments are included under comments #434, #159, #257, and #131.

**#31 Public Concern: The Flathead National Forest should select Alternative 2, 3, or 5.**

While we realize that the selection of a particular Alternative is a delicate political balance between necessary actions, public tolerance and the likelihood of an organized Administrative Appeals and Litigation "delay" tactic, we generally support the implementation of Alternatives 2, 3 or 5. To be clear, we support actions that implement the Purpose and Need of the Moose Post-Fire Project. We do not support the immediate necessity of the road reclamation proposed under Alternatives 2, 3 and 5.

**Response:** Your comments will be considered by the decision maker. Road decommissioning is necessary to address Forest Plan requirements, which we have discussed in the response to comment #15.

**#32 Public Concern: The Final EIS should include alternatives that are consistent with the Forest Plan and National Forest Management Act and would not construct new roads. The alternatives should also not require any Forest Plan amendments and not involve any more openings greater than 40 acres.**

Also please include, for full analysis and comparison, an alternative or two that would meet your dubious Purpose and Need and still be consistent with the direction found in the Forest Plan and NFMA, and would not construct any new/temporary new roads. Such alternatives would not require any Forest Plan amendments, and would not involve causing any more openings to exceed 40 acres.

**Response:** The alternatives presented in the DEIS are consistent with direction in the Forest Plan and NFMA. As disclosed in the DEIS, none of the alternatives proposed any new road construction and Alternative 4 did not propose any new temporary road construction. As a result of some logging system changes which are now disclosed in the FEIS, temporary road construction is not proposed in any of the alternatives. An alternative that did not allow openings to be greater than 40 acres in size was considered, but was not analyzed in detailed study (refer to page 2-45 and 2-46 in the DEIS). Only one of the alternatives (Alternative 3) is proposing project-specific amendments.

**#33 Public Concern: The Flathead National Forest should reconsider the criteria used to select alternatives for analysis.**

The Flathead National Forest violated the Administrative Procedures Act in preparing the DEIS by making arbitrary and capricious decisions. Decisions on deciding major issues on which alternatives to evaluate was biased and arbitrary and capricious.

Identification of major issues for analysis was biased. Eight issues suggested by preservationists were accepted for analysis even though most are speculative effects with no substance or proven science. Only three issues suggested by people with multiple use viewpoints were excepted for analysis and these were poorly stated and incomplete.

**Response:** We do not believe that we made arbitrary and capricious decisions when developing alternatives. We considered several issues to develop potential action alternatives but decided that they did not warrant full development into an alternative. These alternatives not considered in detailed study and why they were not given full alternative development status were discussed on pages 2-43 through 2-46 in the DEIS. Many of the other comments from those people with multiple use viewpoints have been considered in the DEIS and were analyzed in Chapter 3 under the various resource headings. Also, please refer to the response to Comments #15 and 28.

**#34 Public Concern: The Flathead National Forest should reconsider alternatives for analysis based on concerns regarding mortality guidelines.**

We note from the outset that, despite the fact that we raised the concern over the use of mortality guidelines that would allow the removal of trees that would otherwise live, the DEIS fails to identify this as an issue used for the development of the alternatives. . . . The DEIS is flawed under NEPA as a result.

**Response:** We recognize the importance of live trees across a burned landscape, and thus have taken a conservative approach for most species in developing and implementing the post fire mortality guidelines (refer to response to Comments #133, #137). We have considered your request as an alternative but concluded that it did not warrant full development into an alternative that would require detailed study. Please refer to Chapter 2 in the FEIS for this full discussion.

**#35 Public Concern: The Final EIS should clarify actions common to all alternatives relating to timber sale contracts.**

The design criteria for "use of roads by purchaser," "protection of TES habitat," and "conduct of logging" are vague (DEIS 2-8). What will be done in these circumstances and how will this protect resources of concern?

**Response:** The terms quoted refer to timber sale contract clauses. The use of roads by purchaser contract clause would be used to require what roads a contractor may use and when they may use them. The protection of TES habitat clause would be used to constrain when logging occurs or possibly to provide buffers around important habitat. The conduct of logging clause would be used to specify the different logging systems specified in the alternatives along with skid trail requirements. The design features that we have specified in Chapter 2 would be included in these and other contract clauses to ensure that resources of concern are protected.

**#36 Public Concern: The Final EIS should clarify whether each alternative meets Amendment 19 requirements for all areas.**

Do all alternatives meet Amendment 19? For all areas?

**Response:** Three out of the four action alternatives fully comply with all three objectives of Amendment 19 – open motorized density, total motorized density, and security core. In Alternative 3, the three objectives of Amendment 19 are fully met in the Lower Big Creek grizzly bear subunit while one of Amendment 19's motorized density objectives

is fully met in the Werner Creek grizzly bear subunit. Progress is being made towards the other two motorized density objectives in that subunit.

**#37 Public Concern: The Final EIS should clarify whether any analyzed alternatives propose disturbance in the referenced watershed near Skookoleel Creek.**

(2-44) Alt.7 (dropped from consideration), "680 acres within a small watershed near Skookoleel Creek that burned at a very high intensity, and soil concerns led us to avoid disturbance of any kind in this drainage." Was this area avoided in all of the other alternatives?

**Response:** This area near Skookoleel Creek was not included in any of the alternatives.

**#38 Public Concern: The Final EIS should define "legacy areas."**

What are "legacy areas" (DEIS 3-24)?

**Response:** Legacies are first mentioned on page 3-23 in the DEIS, in the context of leaving a variety of structure distributed across the landscape. Perry and Amaranthus (1997) describe legacies in an ecological context as "anything handed down from a predisturbance ecosystem, including green trees, surviving propagules and organisms, dead wood, and certain aspects of soil chemistry and structure, such as soil organic matter, large soil aggregates, pH, and nutrient balances." So "legacy areas" would be those acres affected by the Moose Fire and left untouched by the project, which is at least 91% of the analysis area in all alternatives, and 96% of all NFS lands burned by the fire.

### **Affected Environment and Environmental Consequences**

Comments that evaluate the impacts upon the natural, cultural, and economic resources of the Flathead National Forest intensely reveal the underlying perspectives and desired outcomes driving public responses to the draft EIS. Many concerns within this section were predominately submitted by professional resource specialists from professional societies, natural resource industries, conservation organizations, multiple use groups, and state and federal agencies.

**#39 Public Concern: The Flathead National Forest should assess the post-fire state of the forest.**

Additionally, the post-fire state of the forest should be assessed in order to account appropriately for elements of the ecosystem that have been sensitized by fire.

**Response:** The DEIS and FEIS both acknowledge that extensive analyses before and after the fire have been conducted within the project area (page 1-2 of the DEIS; and in the FEIS). A landscape-level analysis of the Big Creek drainage was completed in November 1999. After the fire, a burned area emergency rehabilitation analysis and a separate post-fire assessment were conducted for the fire area in the fall of 2001. In addition, the DEIS and FEIS also extensively assess the post-fire state of the Moose Fire area.

**#40 Public Concern: The Final EIS should explain how desired conditions were determined.**

Any forest condition that is maintained through intense mechanical manipulation is not maintaining ecosystem function. We request detailed disclosure of the historical data used to arrive at any assumption of "desired conditions."

**Response:** The Moose Post-Fire Project EIS is tiered to the Flathead Forest Plan, which described desired future conditions for the entire Forest. The Big Creek Ecosystem Analysis at the Watershed Scale (Big Creek EAWS), also tiered to the Forest Plan, was completed in 1999, shortly before the Moose Fire. This was a landscape-level assessment of the Big Creek drainage that evaluated historical, current and desired conditions for all resources and provided recommendations for managing the Big Creek watershed. The Moose Post-Fire proposed salvage

activities are all within the Big Creek EAWS analysis area. Refer to the Big Creek EAWS summary document in the Moose Post-fire project record and to excerpts from the Vegetation analysis conducted for the EAWS, located in the Moose Post-Fire project record as exhibit 0-28.

**#41 Public Concern: The Final EIS should describe how historic range of variability was determined.**

The FNF's amendment 21 is predicated, in part, on maintaining the condition of certain resources across the forest within a certain range with respect to the natural range of variability. If the project intends to bring the forest closer to historic or natural conditions or maintain the forest within a certain range within historic or natural conditions, the NEPA document should adequately describe how the historic natural range of variability was determined. Proposed treatments to move ecosystems toward historic ranges of variability (HRVs) defined chiefly by vegetative composition often pose far greater threats to biodiversity than do fires and other natural events that might (or might not) be associated with the "undesired" changes in forest structure (Frissell and Bayles, 1996; Henjum et al. 1994; Rhodes et al. 1994). Hessberg and Lemkuhl (1999) suggest that prescribed burning alone can be utilized in many cases where managers typically assume mechanical fuel reductions must be used. The concept of historic range of variability (HRV) suffers from a failure to provide defensible criteria for determining what ecosystem factor ranges should be measured (Frissell and Bayles, 1996). Also, without information pertaining to how historic conditions were estimated and how accurately they were estimated, it is impossible for decision-makers to make informed decisions as required by NEPA. A failure to disclose methodologies used for estimating the historic range of variability would undermine the scientific integrity of the entire environmental analysis.

**Response:** See response to comment #40. Determination of historical range of variability for vegetation resources is explained in the vegetation analysis within the Big Creek EAWS (project record exhibit 0-28).

**#42 Public Concern: The Final EIS should clarify how natural resources will be impacted if there is a delay in implementation.**

Dates for activities could be delayed even longer, because as the FS states, dates for implementation are tentative (DEIS 2-9). And budgets or other considerations could delay or halt decommissioning/watershed restoration activities. How will impacts be mitigated or reduced? How is protection of soil, water, wildlife and other resources ensured? Is the analysis in the DEIS reliable if it is dependent on these factors?

**Response:** Road decommissioning activities have been included in an implementation schedule that has been forwarded to U.S. Fish and Wildlife Service along with the bull trout and wildlife biological assessments. If these decommissioning activities are delayed beyond the dates specified in the biological assessments, we will reinitiate consultation with the Fish and Wildlife Service, as required by federal regulations.

**#43 Public Concern: The Final EIS should analyze proposed salvage logging activities in relation to past and ongoing area projects.**

Please examine past logging activities, including such information as year and regeneration success level for each past activity in the analysis area and in the cumulative effects area. Please disclose the sizes and condition of manmade openings already existing in the area, and exactly where the proposed cutting units are in relation to the old logged areas. . . . Please include the following in the NEPA document or project file: A list of all past projects (completed or ongoing) implemented in the project area.

**Response:** The DEIS included discussion on past logging activities on pages 3-13 and 3-26, as does the FEIS. Pages 3-1 through 3-5 contain the list of all past projects in the project area. The project record (exhibit O-8) includes a map of past harvest activities in relation to proposed salvage units. The National Forest Management Act mandates that harvested stands be capable of regeneration within 5 years. Project file exhibit O-36 provides a record of regeneration success for the district, with sites similar to those in Big Creek. These are moist and productive sites and vegetative regeneration is not difficult to attain. Where natural seed source is limited, post-fire regeneration of previously managed stands was undertaken in the summer of 2002 with the planting of 850 acres,

and 1026 acres are to be planted in 2003. Table 3-3 in the DEIS displays the acres of stand initiation (seedling/sapling stands, mainly from past harvest) affected by fire severity, as well as older harvest units that had moved into the young-forest multi-story stage.

Patch size and forest structure are displayed on Map 3-2 and described on DEIS pages 3-9 to 3-13. We are now dealing with a post-fire environment where 43% of the area is now in a stand initiation phase, and opening sizes approach 10,000 acres. Forty-acre man-made openings have become irrelevant within the context of the effects of the fire to create a mosaic of structure.

**#44 Public Concern: The Final EIS should include all monitoring information for the project area.**

Please include the following in the NEPA document or project file: The results of all monitoring done in the Project area as a part of the Forest Plan monitoring and evaluation effort.

**Response:** Appropriate monitoring information will be included in the project record.

**#45 Public Concern: The Flathead National Forest should familiarize project staff with monitoring information.**

All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the project area, and any deficiencies of monitoring that has been previously committed to.

**Response:** The resource specialists are using monitoring information to help them understand the relationship of proposed management actions and their effects on environmental components.

**#46 Public Concern: The Flathead National Forest should clarify and expand the cumulative effects analysis.**

What is the character of the prescribed burn (and other cumulative activities) planned in the area (DEIS 3-27)? Were all activities and events included in cumulative effects analysis? . . . Why aren't impacts to Coal Creek watershed and other areas not considered in the vegetation analysis of cumulative effects (DEIS 3-26)? The decision to limit the cumulative effects analysis to the vegetation analysis area (smaller than the project area) appears to be arbitrary. We are concerned that the area was omitted simply because there is a great deal of logging in the area. . . . The EIS should have disclosed the effects of cumulative activities listed on DEIS 3-2 to 3-5, some of which could be quite extensive and significant. For example, what are the effects of logging, roadwork, fire suppression (since 1910), hazard tree logging, noxious weeds, noxious weed treatment, recreational use, and Coal Cr. St. Forest logging?

The DEIS does an incredibly poor job of looking at the cumulative impacts that this project will have both on the analysis area but also the larger area. The DEIS is very focused on showing the impacts from this project but failed to adequately look at the state logging project, recreational use, private land logging, past logging on USFS lands and residential development. The FEIS must improve the cumulative impacts analysis.

**Response:** We believe that the cumulative effects areas are sufficient for each of the resource analyzed. The Coal Creek drainage was not included in most of the individual resource cumulative effects areas because the only activities that the Moose Post-Fire Project EIS proposed in this drainage were pheromone/funnel traps (no salvage proposed) and a fuels reduction treatment area at the lower end of Coal Creek near the confluence of the North Fork Flathead River.

**#47 Public Concern: The Final EIS should define the relationship between current proposals and the Big Creek Ecosystem Analysis at the Watershed Scale.**

The EA does not disclose how much of the late seral or old forest (old growth) habitat was lost due to logging prior to the EAWS (DEIS 3-10). This is important information in determining what the natural range of variability for these forest age classes should be. What old growth surveys and other analysis took place as part of the Big Creek EAWS (DEIS 3-10)? Did the

analysis for the EAWS go through the NEPA process? Did the public have the opportunities to appeal any of the decisions made in the EAWS?

**Response:** The determination of the historical range of variability for the vegetation analysis area is documented in the Big Creek EAWS, in the Moose Post-fire project record. Excerpts from the vegetation analysis, including information on how the old growth/late seral forest was evaluated, are also in the project record (exhibit O-28). The pre-fire current condition for old growth within the Big Creek analysis area was determined to be within the range of historical variability. The EAWS did not make any decisions under the NEPA process (see Chapter I of the Moose Post-fire project EIS, section II. Background). There was a public involvement process followed during the development of the Big Creek EAWS (as described in the EAWS summary report), but since there were no decisions made, there was no appeal process initiated.

**#48 Public Concern: The Final EIS should analyze potential restoration work impacts in reference to a spectrum of forest conditions.**

The environmental analyses should address the potential impacts of the restoration work in reference to a spectrum of forest conditions, rather than simply the post-fire conditions.

**Response:** The post-fire condition is the existing situation. The proposed project responds to the purpose and need for action identified in the Big Creek drainage.

**#49 Public Concern: The Flathead National Forest should correct misrepresentation of data in the Final EIS.**

The Forest Service's own study recommended that, in order to avoid marking live, viable ponderosas "dead", the Forest Service should not mark any ponderosa as dead or dying unless it has at least 90% crown volume kill. Saveland, U.S.F.S., and Leon Neuenschwander, "A Signal Detection Framework to Evaluate Models of Tree Mortality Following Fire Damage", *Forest Science*, Vol. 36, No. 1, DP- 73-75 (1990). What is most disturbing is that the DEIS, on App. B, pages 2 and 3, mis-cites the studies conducted by Ryan and Peterson and others, including some of the studies cited above in these comments. The DEIS incorrectly cites these studies to support its mortality guidelines, despite the fact that some trees logged under these guidelines would otherwise live (unless they have complete crown kill, of course). It is one thing to fail to analyze an issue properly. It is another thing entirely to cite studies for a proposition opposite to that for which they really stand. The DEIS is inadequate under NEPA due to this, and the Forest Service fell far short of the "hard look" required by NEPA.

**Response:** Refer again to the Post-fire Mortality Guidelines in Appendix B of the FEIS. We disagree that the studies referred to have been misrepresented. Support for our contention that we accurately represented the research studies is provided by the review of the Moose post-fire mortality guidelines by Kevin C. Ryan, a project leader in the Fire Effects department of the Fire Science Laboratory in Missoula, and one of the most prominent researchers in this field (Moose Project record Exhibit O-35). As we all acknowledge, numerous variables can influence a tree's survival after a fire, and different species of trees will react very differently to fire damage. Predicting tree mortality is not an exact science, but informed judgments can be made on whether a tree is likely to die or not from the effects of a fire. Along with the research literature, site-specific conditions of the Moose Fire area, including the potentially high bark beetle populations, have been and are taken into account in development of mortality guidelines for this project. It is understood that some of the trees that we identify in the guidelines as likely to die may in fact live. However, the guidelines are believed to be conservative for most species and more likely than not, the trees will die rather than live. This conclusion is based upon a review of pertinent literature, including all that the commenter referenced, knowledge of the site-specific conditions in the Moose Fire area, as well as review by a leading researcher. In regard to ponderosa pine, all alternatives would leave all ponderosa pine, live or dead, of any size. Also see response to Comments #34, #110 and #134, which are related to questions on the adequacy of the post-fire mortality guidelines.

**#50 Public Concern: The Flathead National Forest should log more in the burn area.**

I am disappointed to see so few acres (3721) with some sort of management plan because burned areas left untreated may never become healthy forest again; lodge pole pine grows so thick after a fire that its growth is impeded—example of this is the cross-section of a lodge pole pine tree in the display case at the Glacier View building when it was in C. Falls that was 70 years old and only as big around as a baseball bat.

I'm disappointed in the alternatives. 35,000 acres burned and the most you want to harvest is 3,000 acres, what about the 32,000 other acres we are leaving for the next fire. If we remove the down and standing burned trees less black ash will go into our streams and rivers, that's good for the bull trout and this removal would allow the vegetation to grow which would benefit the grizzly bears and lynx. Consider harvesting more like 30,000 acres.

I want to comment on the Moose Fire salvage plan. I believe that it is wasteful not to log all salvageable timber. Please see that all the burned area is properly used. Wood cutting should be opened to the public also. I understand that the proposals intend to use a very small portion of harvestable timber. Please don't allow this!

**Response:** See response to comment #27.

**#51 Public Concern: To comply with the Multiple Use Act, the Flathead National Forest should log in the project area.**

Mr. Herrera, you have stated publicly that the reason that you do not offer more timber for sale is that it is not merchantable. Yet, though much of the timber on both sides of the North Fork Rd is highly merchantable as well as easy to get to, you intend to waste all of it. Log some of that good wood Mr. Herrera if you truly intend to comply with the forest plan and the "Multiple Use Act" which recognize timber harvest as a legitimate and required use of the Flathead Forest.

**Response:** See comment 27. Also, Alternative 7 says this project “does not preclude the potential future removal of smaller diameter trees for post and pole material in areas that may be better accessible such as adjacent to the North Fork Road...” (DEIS, page 2-45)

**#52 Public Concern: The Flathead National Forest should not log the Moose Fire area.**

I am writing because I am of the firm belief that the Big Creek area will do just fine without management. This has been the case in the past (with past fires), so I don't see any need to log it. Please do what is best for Big Creek's fish, wildlife, and water quality. Decommission roads and do not salvage log it.

Salvage logging provides no environmental benefit to the post fire forest and would only damage these sensitive and fragile soils, degrade bull trout spawning areas and habitat of grizzly bear, gray wolf, and lynx, destroy natural vegetation and contribute to the spread of noxious weeds.

**Response:** See response to comment #25, and the description of the purpose and need for the proposal in Chapter 1.

**#53 Public Concern: In order to protect forest resources, the Flathead National Forest should not clear-cut in the burn area.**

We are opposed to even-aged management due to the resultant damage to wildlife habitat and fisheries. The FS should consider the degree to which the silvicultural methods proposed contribute to even-aged management on the ground, or mimic even-aged management, and the resulting impacts to wildlife habitat, fisheries, plant habitat, recreational experience and scenic resources. The FS should disclose why any even-aged logging proposed here is appropriate in a fragile post-burn environment. Please disclose whether any clearcut openings of any size will be created and explain the optimality or non-optimality of these cuts in a fragile post-burn environment.

**Response:** As described on page 3-10 of the DEIS and again in the FEIS, and displayed in figures 3-1 and 3-2, the Moose Fire was a *stand-replacing* event over most of the area it burned in the Big Creek drainage. About 2950 acres was in the stand-initiation (seedling and sapling) phase before the fire, mainly from timber harvest. After the

Moose Fire, there are now 17,763 acres that are one age class and are now in the stand-initiation phase (Tables 3-4 thru 3-6 DEIS). The tables on page 3-23 of the DEIS display how the successional structure of a stand will not change, regardless of salvage harvest, because the objective is to remove dead and dying trees, not the live or expected to survive component. The FEIS, Chapter 2, under the description of the alternatives, provides information on the trees (live and dead) that would remain within all harvest units following salvage (such as larger diameter larch, unmerchantable dead, etc). Woody debris for nutrient cycling would be left in all harvest units, meeting or exceeding standards for Amendment 21 to the Forest Plan.

Protection of the soils following fire is recognized as very important, and is a major consideration in the selection of logging systems and post-harvest slash treatments. Effects of proposed actions on the soils (as well as other resources) is fully disclosed in Chapter 3 of the EIS. The interdisciplinary team of resource specialists only identified one major area considered especially “fragile”, and that was a drainage on the western edge of the fire area, near Skookoleel Creek, where burn intensity was particularly high and soil conditions were a concern. No salvage harvest is proposed in this area.

**#54 Public Concern: The Final EIS should prohibit salvage logging to preserve the unique characteristics of the Flathead and North Fork drainages.**

We are very concerned at the large scale of this project. Salvage logging almost 4,000 acres will undoubtedly alter the character of this relatively wild area located next to Glacier National Park, one of the three great wild protected ecosystems left in the Northern Rockies. The lands surrounding Glacier are incredibly important for wide-ranging species that need more than Glacier's core habitat to survive. The area encompasses the last unsettled drainage on the Canadian side of the 49th parallel, and the Whitefish Mountains—some of the wildest country remaining in the continental United States. As a result, the Flathead/North Fork drainage supports the densest non-Coastal population of grizzly bears in North America, functions as a vital wildlife corridor between Canadian and US wildlife populations, and links the Peace Park complex to the wild lands of northwestern Montana and southeastern BC. Due to the extreme uniqueness of the area we implore you to reconsider this sale and allow the North Fork to remain wild.

**Response:** Updated figures for the alternatives show a maximum of 2428 acres of proposed salvage harvest in the Big Creek drainage, a number that is less than ten percent of the fire area on national forest lands, and four percent of the 58,500-acre analysis area.

The Big Creek drainage has had human activity, including logging, occurring in it for over 50 years. The North Fork has been roaded since 1917, with homesteading, agriculture, and mining exploration also occurring there since 1887. We do not feel this proposal will threaten the integrity of Glacier Park or the rest of the North Fork of the Flathead drainage.

**#55 Public Concern: The Flathead National Forest should manage the land to conform with naturally occurring processes.**

Are the proposed management activities designed to foster the processes that naturally shaped the ecosystem and resulted in a range of natural structural conditions, or are they merely designed to recreate structural conditions in a single point in time that you consider natural? Generally, past process regimes are better understood than past forest structure. How are you factoring in fire, insects, tree diseases, and other natural disturbances in specifying the structural conditions you assume to be representative of the historic range?

**Response:** As stated under the response to Comment #40, determination of the historical range of variability of vegetation characteristics was completed and described in the Big Creek EAWS landscape analysis. This range is meant to reflect the condition of the landscape operating under the influence of natural disturbance regimes. The Moose Fire is considered a natural disturbance, and its broad effects on the landscape are not outside the range of historical variability. As explained in Chapter 3 of the EIS under the Vegetation section, the change in structure classes across this landscape was a function of fire severity and the pre-fire cover type. Our salvage actions will not change the forest structure provided by the live trees, but will remove some of the dead and dying tree components.

The analysis in the EIS discloses the effects of this action on the integrity and condition of all affected resources of concern, with Alternative 1 (No Action) disclosing the effects on forest conditions with no salvage harvest.

**#56 Public Concern: The Final EIS should analyze whether artificial revegetation efforts will hinder natural regeneration.**

Considering that the forest has evolved to include fire and has developed processes to regenerate following fire, we believe that aspects of the proposals presented in the DEIS, such as salvage logging and tree planting, may disrupt the natural process of forest regeneration. . . . Grass seeding and reforestation measures may prevent natural post-fire succession patterns that are essential to the post-fire regeneration of the forest. Beschta et al. (1995) state "from an ecological perspective, there is frequently no need for artificial regeneration. Artificial reintroduction of species will circumvent natural successional changes." Also, "such practices [as reseeding and replanting] should be employed only when there are several years of evidence that natural regeneration is not occurring" (Id.). . . . Seeding and reforestation may alter habitat composition and alter competition, which could result in a favoring of non-native species. USDA (2000) notes, "Salvage logging may decrease plant regeneration, by mechanical damage and change in microclimate." Seeding and reforestation aspects of the proposed projects must be carefully detailed and should be discussed in reference to the natural post-fire regeneration. Potential impacts of logging related disturbance on natural regeneration must be thoroughly analyzed. . . . What is the success of aerial seeding (DEIS 3-26)? How successful will these and other reforestation methods be in the project area? . . . The section on regeneration in previously managed stands avoids the issue of past regeneration success/failures (DEIS 3-13). How did areas with large distances to seed walls regenerate naturally before man-caused habitat manipulation (DEIS 3-14)? How are burned areas different from logged areas in this respect? Effects of the project? . . . Please disclose (by providing maps and other documentation) the regeneration success level from past even-aged logging in the immediate and surrounding compartments, explaining the dates of logging, the problems encountered and duration needed before certification of restocking.

**Response:** Ground-based salvage logging would impact seedlings that have begun to develop since the Moose Fire occurred, but the impacts would be mostly limited to dedicated skid trails. Summer ground based logging systems and to a lesser extent skyline will affect some natural seedlings, but hand planting of native tree species appropriate for the site is prescribed to ensure adequate reforestation and desired species diversity. A maximum of about 263 acres of ground-based summer logging may occur with this project. Skyline units may impact seedlings if there is not full suspension of logs as they move up the cable, but this would be a limited area within a harvest unit. Skyline logging might occur on up to 266 acres with implementation of this project.

There is very little doubt that natural regeneration will occur within the fire area, as described on page 3-14, 3-16, 3-18, 3-19, and 3-21, just as it has for thousands of years, and as it did on the north half of the Moose Fire area after the 1910 fire (page 3-9 DEIS). In many areas it is likely to regenerate to very thick stands of lodgepole pine (DEIS page 3-16), as witnessed on the Red Bench Fire of 1988, a few miles to the north, with upwards of 50,000 trees per acre in the seedling stage. Stands of "doghair" like these leave few management options for future generations. Growth of trees is stunted; understory plant development very limited; and they do not grow into old growth habitat. Further, monoculture lodgepole pine stands become susceptible to mountain pine beetles at around 70 years of age, contributing to a well-documented cycle of fire, lodgepole pine, pine beetles, fire, etc.

Our Forest Plan outlines standards and goals for MA 15, which include emphasizing the cost-efficient production of timber while protecting the productive capacity of the land, and creating diverse patterns of vegetation. In managing the forest for future regenerations, we feel a biologically diverse forest is a resilient forest. This is why we are proposing planting other native species such as western larch, white pine, ponderosa pine, Douglas-fir and Engelmann spruce. Aerial seeding was done on Demers Ridge and Deadhorse Ridge specifically to establish some other native species there to compete with the expected abundance of natural lodgepole pine (DEIS page 3-14). There is no reason to believe either planting or seeding of native tree species common to the ecosystem would result in the favoring of non-native species.

Success of regeneration in the project area has been tracked since 1976. Regeneration success has been generally good (Project file exhibit O-36). Where natural regeneration has failed, we have planted trees in accordance with the National Forest Management Act.

**#57 The Flathead National Forest should revegetate the project area with the full range of native trees, shrubs and grasses.**

We recommend that revegetation efforts include the full range of native trees, shrubs and grasses normally found on these sites.

**Response:** Because there was very little area within the fire that burned at severe intensity (i.e. damaging the soil), it is expected that the forests across this burned landscape will be well able to restore themselves through natural regeneration of shrubs, grasses and trees, as is already occurring. Because of the planned salvage activities, we will ensure that adequate reforestation of salvage units occurs, with planting anticipated in units where natural regeneration is not expected to be sufficient (refer to alternative descriptions in Chapter 2 of the FEIS). Planting of native larch, Douglas-fir, western white pine and ponderosa pine may occur, on sites determined to be suited to the species.

**#58 Public Concern: The Flathead National Forest should consider postponing salvage operations until 2003.**

Most of the trees that were mortally injured by the Moose fire in summer of 2001 will be completely brown (i.e., will have no green foliage) by the end of summer of 2002, and most of the rest—if they were mortally injured—will be dead by summer of 2003. In light of this, what's the hurry? Why not wait until next year and see if partially green mature and old growth trees survive?

**Response:** Delaying salvage would not meet the two main purpose and needs for the project, which are most effectively met by salvaging as soon as possible after the fire. Fire-killed trees can rapidly deteriorate, reducing the amount of recoverable wood fiber. Field surveys indicate that 20-30% volume reduction has already occurred due to checking and deterioration of smaller trees and tops, and experience indicates that another 20-30% volume loss can be expected in the next year. Removal of highly beetle susceptible or infested trees as soon as possible is the most effective means to influencing beetle populations in the projects area, rather than waiting until beetle populations have a chance to capitalize on the increased food source and build up their populations.

**#59 Public Concern: The Flathead National Forest should permit logging of merchantable trees that pose safety risks.**

We also suggest that the FEIS authorize the removal of merchantable trees that have to be felled for safety reasons.

One of the purpose and needs was the recovery of merchantable wood fiber. The proposed action arbitrarily specifies to leave all dead western larch greater than 18 inches in diameter within salvage harvest units and abandoning the opportunity to harvest dead and dying spruce and other species in riparian areas. We would request that the FEIS analyze and the selected alternative authorize the removal of merchantable trees that have to be felled for safety reasons.

Page 2-9: As mentioned in our Purpose & Need critique, it would be economically beneficial to remove merchantable trees that are designated for retention but have to be felled for safety reasons. Such trees can still pose a significant safety hazard when felled and left on the ground. This is particularly true of helicopter landing areas. We suspect that you are designating such trees to be left "on the ground" for political reasons and not for the stated purpose of downed wood habitat (of which there is more than a sufficiency throughout the project area). We suggest that the FEIS authorize the removal of such trees and allow the import of downed wood habitat using unmerchantable trees from adjacent areas when necessary to meet downed wood habitat objectives.

**Response:** The requirement to leave the larger diameter designated leave trees (18 or 20" DBH larch) on the site is a recognition of the importance of these larger trees in the ecosystem, whether standing or downed, for wildlife habitat, feeding sites, and long-term soil productivity values. No amount of small diameter snags or downed wood is an equitable replacement for this large diameter material.

**#60 Public Concern: The decision should include more road decommissioning, less salvage logging, and fewer snowmobiles.**

I believe that the draft EIS makes it clear that more road decommissioning, less salvage logging and fewer snowmobiles are best for Big Creek's fish, wildlife and water quality. Therefore I believe that the final decision must ensure that these three actions occur in this important wild area.

**Response:** As written in many places in the DEIS, road decommissioning and salvage logging result in both positive and negative effects depending on the resource being affected. Proposed road decommissioning and salvage logging both result in similar amounts of sediment being potentially introduced into streams (refer to page 3-217 of the DEIS, and in the FEIS) These sediment amounts, however, are less than 1% of the background sediment produced naturally post-fire, based on modeling. Road decommissioning helps to improve the long-term sediment situation, but does have some short-term impacts to fish and water quality similarly as does salvage logging. Limiting snowmobile use in the Big Creek drainage is outside the scope of the Moose DEIS, and is more appropriately addressed in the ongoing Winter Motorized Recreation Forest Plan Amendment.

**#61 Public Concern: The Flathead National Forest should acknowledge that Alternative 4 would provide the greatest level of environmental protection.**

The EPA is supportive of the need to decrease bark beetle risks to Douglas-fir and spruce, to recover merchantable timber to support the local economy, and to reduce fuel accumulations and future fire risk in the Moose Post-Fire project area. The EPA does not object to any of the proposed project alternatives, although we do consider Alternative 4 to be environmentally preferable. Alternative 4 involves no road construction, and includes 30 additional miles of road decommissioning, 300 foot RHCA buffers on all streams including intermittent streams, and avoids harvest in roadless areas and the Wild and Scenic River corridor. We believe Alternative 4 would result in reduced levels of environmental impacts, and would provide the greatest level of long-term watershed, fisheries, and wildlife benefits.

**Response:** NEPA regulations requires that, in cases where an EIS has been prepared, the Record of Decision (ROD) must identify all alternatives that were considered, ". . . specifying the alternative or alternatives which were considered to be environmentally preferable." The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. The environmentally preferable alternative will be identified in the Moose Record of Decision.

**#62 Public Concern: The Flathead National Forest should consider all ecological impacts prior to salvage logging in the burn area.**

The desire to rapidly salvage burned timber must not become an excuse to embark on a large logging project without thoroughly considering the ecological impacts of such a project. Beschta et al. (1995), a commentary paper compiled by eight scientists and submitted to the regional forester, finds that "there is generally no need for urgency, nor is there a universal, ecologically-based need to act at all. By acting quickly, we run the risk of creating new problems before we solve the old ones. Ecologically speaking, fires do not require a rapid human response."

**Response:** We believe that we have thoroughly considered the ecological effects of the project in both the EIS and the supporting documentation in the project record. We do believe that there is urgency to complete the project to address at least two of the purposes of the project - bark beetles infesting live trees within and adjacent to the fire area and loss of value of potential wood products. We addressed the Beschta et al. paper throughout the EIS and in Appendix D of the DEIS and FEIS, and this particular point on page D-2 and D-3. We responded by saying:

"The Moose Post-Fire Project is intended to respond to an array of needs: social, economic, and regulatory, as well as ecological. The Moose Post-Fire Assessment identified a high potential for bark beetle populations within the fire to influence Douglas-fir and spruce stands outside the fire perimeter, including some that are privately owned, and this became a key purpose and need for the Moose Post-Fire Project. See Chapter 1 of

the DEIS for an explanation of the purpose and need. A beetle epidemic could have significant economic and aesthetic impacts upon nearby landowners. Important Flathead National Forest resources within the Big Creek watershed, such as old growth and riparian timber stands, are also at risk from a bark beetle outbreak. The vegetation section of Chapter 3 of the DEIS provides a detailed analysis of the risks associated with the potential Douglas-fir and spruce bark beetle epidemics.

We also felt there was an economic need to salvage trees, especially on lands within the fire where timber production is the primary goal, as designated by our Forest Plan. Many members of the local community support salvaging burned trees, and said so during the initial public scoping for the project (project record D-2). Burned trees deteriorate rapidly and lose their economic value if not harvested in a timely manner.”

### **#63 Public Concern: The Final EIS should disclose the potential negative impacts from post-burn salvage logging.**

Salvage logging has the same ecological impacts as any other logging, except that it often takes place on sites that have recently suffered the effects of disturbance from fire or wind storms. Those impacts can be either direct, from the actual physical effects of logging, or indirect, through the removal of trees from the forest. Therefore, the decision to salvage should take into consideration the known negative consequences of logging, rather than assuming that salvage will only benefit the forest. The DEIS fails to disclose the adverse ecological effects of past salvage logging projects, and fails to disclose the scientific controversy over continuing to use commercial salvage logging in burned areas. . . . There are also many long-term indirect impacts not considered in the DEIS. Burned forests resulting from stand-replacing fire play a vital role in forest ecosystems. The removal of dead and dying trees compromises the natural processes and functions of the forest, leaving degraded wildlife and plant habitat, simplified terrestrial and aquatic environments, and potentially impoverished soil for decades following harvest. Furthermore, logging, by cutting trees before they fall, prevents the development of pit-and-mound soil architecture and further simplifies the forest ecosystem.

**Response:** A major purpose of an EIS is to disclose the possible effects (positive, negative or neutral) of proposed actions on resources. The Moose Post-fire EIS documents this analysis in Chapter 3 for all affected social and biological resources. It is recognized that burned forests have a role to play in forest ecosystems. Treatment prescriptions (see Chapter 2 of the EIS, under the alternative descriptions) incorporate measures designed to retain important components of the burned landscape, such as larger diameter trees, trees likely to survive, unmerchantable standing and downed woody material, in addition to using low impact logging methods across most of the units (helicopter, winter logging). Further actions would be taken to avoid or reduce potential effects, as disclosed in Chapter 2 under design criteria common to all alternatives.

### **#64 Public Concern: The Flathead National Forest should analyze potential logging impacts to forest resources based on past logging in similar areas.**

Evaluate the likelihood of consequential blow-down of remaining trees in the cutting units or trees bordering the cutting units, based upon past logging in similar areas. What is the likelihood of the District later doing salvage actions in this area as a result of the actions from this proposal such as from escaped slash burns? Please fully disclose, via analysis of the "no action" alternative, forest succession and ecosystem functions and structures. Based upon monitoring of results of previous logging in the area, discuss how the action will affect insect infestations and other disease outbreaks and how likely is it that the effect will be to stress other trees near the cutting units, causing them to be more susceptible to attack by insects or diseases. Please assess the hazard of human-caused wildfire, given that slash left after cutting and slash burning are a fire risk to adjacent forested areas.

**Response:** The likelihood of blowdown was discussed in the DEIS at page 3-17. Broadcast burning is not planned and burn piles escaping is unlikely given conditions in which piles are burned (typically with snow on the ground), so the likelihood of further salvage based on escaped slash burns is remote. Forest succession and structure were covered in the DEIS at pages 3-9, 3-10, 3-17, and 3-18.

Spruce beetle control salvage actions on the Little Wolf Fire on the adjacent Tally Lake Ranger District were extremely effective in reducing spruce bark beetle populations (Gibson et al. 1999).

All areas will have downed woody debris (slash) left to provide soil nutrient cycling and structure for small mammals; where slash is expected to be excessive, jackpot piles would be burned. Some units are prescribed for whole tree yarding to reduce the amount of finer materials across the unit. Based upon interviews with long-term forest employees, incidence of human-caused wildfire in logging slash is extremely low on the Flathead National Forest.

**#65 Public Concern: The Final EIS should justify imposing limits on salvage logging.**

In addition to what obviously is a public safety concern in not developing a more aggressive fuel reduction plan and by leaving dead and dying trees that run the risk of falling, some of the specifications in the proposed alternatives appear to simply be arbitrary. All of the issues in the area of recovering merchantable wood fiber need to be revisited and a plan developed using science and logical conclusions. An example is the decision to leave all dead western larch 18 inches in diameter or, the decision to not harvest dead and dying species in riparian areas. What was the rationale behind those decisions?

**Response:** Refer to response under comment #131.

**#66 Public Concern: The Flathead National Forest should supply evidence from past salvage logging operations that salvage logging will achieve the desired management goals.**

If a case could be made for removing large numbers of trees from the project site, the DEIS came as close as any salvage project paper I have seen to making it. What is missing, however, is the evidence in the form of case histories in which salvage "treatments" have clearly achieved the end result the managers intended. "Common sense" as a tool for measuring effectiveness does not suffice for any other prophylactic action I am aware of, whether it is in business, warfare or any other branch of activity. Proof that extreme measures such as amputation of limbs or other vital organs, or drastic removal of trees actually saved or otherwise unambiguously improved the condition of the patient (in this case the ecosystem of which the fire site is a part) is needed before I will be convinced that those measures are worth pursuing when measured against the adverse effects of salvage logging. . . . I have seen several areas salvaged in the past decade in the Idaho Panhandle and the north fork Coeur d'Alene River which appeared to have been damaged more by the post-fire salvage logging than by the fire itself.

**Response:** The EIS fully discloses the effects of salvage actions on all resources of concern, basing the analyses on a wide variety of sources, including peer-reviewed scientific literature pertinent to the Moose post-fire project; data gathered by personnel from the Forest Service, other agencies or entities; the many years of local and regional experience of the resource specialists; assessments conducted at both small and larger scales of analysis that provided information and an ecological context for the project; and countless hours of site specific field review and data collection conducted in the Moose Fire area by the interdisciplinary members.

**#67 Public Concern: The Flathead National Forest should justify the assumption that post-fire logging will not affect tree structure class.**

The FS makes the assumption that the post-fire logging will not affect structural class (DEIS 3-23). This depends on the proportion of cutting (and residual damage, logging induced-root damage, and logging induced blowdowns).

**Response:** As stated on DEIS page 3-23, the vegetative structure classes referred to are based on the live tree component. The salvage proposal affects dead and dying trees, and effects to live trees are expected to be minimal. The majority of the harvest units would employ helicopter, skyline, or winter logging, creating negligible damage to residual tree roots. As cited on page 3-13 of the DEIS, blowdown is expected to affect the majority of trees in the fire, with or without salvage logging. See also response to comment #55.

**#68 Public Concern: The Final EIS should justify logging targets in moderate severity stands.**

Why are moderate severity stands targeted to a higher degree than high severity burned stands (DEIS 3-24)? Are trees in stands that are more likely to survive being targeted?

**Response:** Stands were not targeted for treatment based on the fire severity directly. Stands were selected based on the purpose and need for the project: their risk of beetle infestation and the availability of recoverable wood fiber. Fire severity indirectly affects these factors. For example, low and moderate fire severity stands often tend to be at higher risk to beetle infestation, due to the condition of the killed and stressed trees. Higher severity stands have more fire mortality and thus usually more trees from which we would want to recover merchantable value.

**#69 Public Concern: The Flathead National Forest should verify mortality in large diameter larch stands.**

Appendix A/Salvage Unit Information Alt. 2 & 5. Of all of the salvage units that have large diameter larch (12-25"), 6 have a 90% mortality rating, 2-50%, 3- 60-80%. These units should be ground truthed to see if the FS isn't just cutting larch to get out the cut.

**Response:** See response to Comment #68, where the criteria for selection of potential salvage stands are outlined. Further field verification since the DEIS has allowed updating of the existing and expected condition for each unit, as disclosed in Appendix A of the FEIS. All proposed harvest units have been field verified.

**#70 Public Concern: The Final EIS should explain how snag protection measures will be enforced.**

It is stated that large high value snags within 200 feet of a open road or within riparian conservation areas would be designated/signed to protect from firewood cutters (page 2-10). We are pleased that protection of high value snags near roads and within RHCA's is proposed, although it is not clear how such designation would actually protect a snag from firewood cutters if they decide they want to cut a high value snag for firewood and no one is around to stop their cutting.

**Response:** This is a concern, as you mention, and signing is the minimum action we can do at this time to try to protect these high value snags. It is unknown at this time what level of enforcement might be needed in this area. The situation will be monitored and appropriate response taken based upon monitoring results.

**#71 Public Concern: The Final EIS should reconcile the discrepancies for figures regarding seral acres.**

Why are figures for late seral acres much lower on DEIS 3-23 than on DEIS 3-11. These older stands may be scarcer than disclosed, or there may be greater impacts to older stands than disclosed.

**Response:** The figure on DEIS page 3-11 shows late seral affected by the fire. Pre-fire late seral acres constituted 12%, but the stand-replacing intensity of the Moose Fire created 90 -100% mortality and reverted those acres back to a stand initiation phase, leaving the approximately 423 acre figure on page 3-23 of the DEIS.

**#72 Public Concern: The Flathead National Forest should not salvage log large or old trees on low severity sites.**

Many of the stands considered to be at higher risk burned at a lower severity, so this logging proposal may merely be a means of targeting stands with bigger or older trees on low severity sites that should not be logged under a post-fire logging project (DEIS 3-40). The case may be similar on some of the more productive spruce sites with respect to spruce beetles. We oppose such a backdoor attempt to increase logging on our national forests. Bark beetle activity is normal and natural (DEIS 3-43).

**Response:** See also response to similar comments on the role of bark beetles #147, #155 and #156. See response to Comment #68 for how stands were selected for potential salvage. Trees that are dead or most likely to die (refer to post-fire mortality guidelines) are those selected for salvage, no matter what fire severity the stand experienced. Douglas-fir is a species of concern because of the concern with bark beetle epidemic conditions developing (EIS, Chapter 1, Purpose and Need for the Project). Bark beetles are normal and natural. However, epidemic levels of beetle infestations are not desirable in this area due to the importance of the few remaining large, live Douglas-fir and spruce trees within the burned area, and the proximity of beetle infestations to private and state forest land.

Douglas-fir that has been injured but not immediately killed by the fire (such as might occur under a low or moderate severity fire) are highly vulnerable to beetle infestation (EIS, Chapter 3, Spruce and Douglas-fir Bark Beetles). The stands susceptible to spruce beetle are composed of some of the largest oldest trees in the project area, and many burned at low severity with low levels of predicted mortality. These stands are not proposed for salvage, but will be treated with pheromone traps to meet the purpose and need of reducing potential beetle populations while attempting to retain the large, live old tree component.

**#73 Public Concern: The Final EIS should clarify that according to the current forest plan approximately 20,000 acres of the project area are available for timber harvest.**

Chapter 1, section Individual: The comments "Other features found within the project area include several dispersed camping sites, trailheads, trails, portions of the Big Mountain Ski Resort, inventoried roadless areas, and the Wild and Scenic River corridor along the North Fork Flathead River," do not include the critical information that approximately 20,000 acres of the project area are designated by the current forest plan as units available for harvest.

**Response:** You are correct in your comment that there is over 20,000 acres within the fire area that are considered by the Forest Plan as suitable for timber management. However, as we alluded to in comment #27, there are reasons why more harvest was not proposed; these reasons were elaborated in the DEIS on pages 2-44 and 2-45. Some of these reasons included: unburned forest, soils that were burned quite severely; thousands of acres of small diameter trees less than 9" in diameter; and past regeneration harvests.

**#74 Public Concern: The Flathead National Forest should re-evaluate Management Areas to determine logging suitability.**

The timber emphasis for MA 15 is clear from the text of the DEIS. For example, "vegetation treatments are appropriate and expected on MA 15 lands" (DEIS 3-14). The same misplaced emphasis is used to some degree for some of the other MAs. However, since the fire significantly changed the condition of the project area all MA 15 and other currently suitable MAs should be evaluated to determine whether they are now physically and economically suitable for logging.

**Response:** Fire is a natural disturbance process that has been influencing forests here for ten thousand years. The fire has not changed site productivity or biotic potential on these lands, except perhaps for the 1% of area where soils were burned more severely (refer to DEIS map 3-12). Even on this 1%, it is doubtful that long-term loss of site productivity will occur. None of these more severely burned areas are proposed for salvage. All units have been verified on the ground and determined to be physically and economically suitable for logging and reforestation.

**#75 Public Concern: The Flathead National Forest should adopt a dynamic perspective of forest succession.**

The conditions of the forest just previous to the fires should be considered a point in a process of forest succession rather than a static condition. Such a dynamic perspective may influence perceptions of "value loss" and "resource damage" due to wildfire.

**Response:** For coniferous forests in the northwest, this holds true for any disturbance. The dynamic perspective is understood in the Moose Post-fire analysis, and incorporated into the analysis of vegetative conditions based upon the Big Creek Ecosystem Analysis, completed in 1999 (DEIS, Chapter 1; Big Creek EAWS vegetation analysis in project record exhibit O-28). The EAWS analysis determined the *historic range of variability* (i.e., non-static) for Big Creek for vegetative conditions, and the Moose Post-Fire EIS evaluates the post-fire vegetative conditions in light of the "natural" conditions. Determining "value loss" and "resource damage" depend upon consideration of both the "natural" range of variability, and the multiple resource and social land management objectives, as outlined in the Forest Plan. Big Creek had hundreds of thousands of dollars invested in reforestation and timber stand improvements that were lost to the Moose Fire.

**#76 Public Concern: The Final EIS should consider additional winter logging.**

The option of winter logging should be retained to the USFS if needed.

It may also be reasonable to utilize winter logging in units 3, 4, 10, 19, 21, 28, 29, 35, 43, 44, 62 to maintain soil productivity and reduce erosion, and to include planting of Ponderosa pine for species diversity (winter logging and Ponderosa pine planning are restricted in Alternative 4).

**Response:** Winter logging is proposed in three of the four action alternatives, including the preferred alternative. Winter logging would occur in those units where the protective layer of snow is deemed necessary to protect resources. Ponderosa pine is proposed for planting in the units where suitable habitat for the species exists.

**#77 Public Concern: The Flathead National Forest should ensure that the appropriate trees are marked for logging.**

We also note that the National Forest Management Act requires Forest Service employees, NOT timber contractors, to mark the trees that will be removed. The Record of Decision must make this clear.

After reviewing the DEIS, I have serious objections to many portions of the project. Foremost is the proposal to salvage log in a post burn recovery area. I have seen many post burns from the fires of 1910, 1944 and 2000 and looking at these areas tells a clear story about the effects of salvage logging. Right now in the Bitterroot recovery area we are seeing increased sedimentation due to slope failure that is threatening endangered Bull trout habitat. Loggers are freely cutting green trees that should be left on the ground because all they use are little cards to determine if the tree is burnt enough. This practice is not acceptable on any forest and I am curious to know how you plan on determining which trees to cut.

**Response:** In accordance with applicable federal regulations, Forest Service would designate (either by contractual description or by marking trees with paint) which trees would be removed and which would be left on the site, following the guidelines provided in the FEIS (Appendix B, Post-fire Mortality). Employing diameter limits and species designations would afford high protection to some of the most valuable trees (i.e. the larger diameter larch and all ponderosa pine. Refer to Alternative descriptions in Chapter 2 of the FEIS). Marking the larch trees to be retained in units to be winter logged would be used to ensure their protection.

**#78 Public Concern: The Flathead National Forest should not use hatchets to check for cambial damage.**

We also request that you not use hatchets to check for cambial damage as such practice can open the tree to pathogens and attract bark beetles, which could increase mortality rates in stressed trees that otherwise might have survived. The use of hatchets is an irretrievable commitment of resources under NEPA and must be avoided, or at least disclosed and analyzed. The DEIS fails to do this. In addition, the most recent research, including the Stephens and Finney study, makes clear that cambial damage is not a particularly good indicator of mortality, unlike crown kill, which is a useful predictor.

**Response:** Refer to the FEIS, Appendix B, Post-fire mortality guidelines, for the guidelines that will be used to determine leave trees and salvage trees, and how they might be implemented. Exploratory sampling through the bark with an axe will be used primarily for calibrating the visual indicators of cambial damage with actual damage. Because it is very time consuming, it would be used on a very limited basis across the many acres of potential salvage treatment.

**#79 Public Concern: The Flathead National Forest should not permit logging of large trees.**

It appears that extensive high grading of large and other species took place in the past, in part due to bark beetle logging (DEIS 3-14). The design features and prescriptions must be designed in order to avoid repeating or exacerbating this problem. It appears that even though larger trees have already been depleted, the project will allow the logging of some of the remaining large trees and snags under the guise of continued bark beetle and salvage logging.

**Response:** The value of the larger trees and snags on this burned landscape is recognized in this project, in the development of harvest prescriptions (Chapter 2 of the EIS, and Appendix A), in the design of alternatives around

this issue (Alternative 4) and in the analysis disclosed in Chapter 3 of the EIS, under the Snag habitat section. Refer also to response to Comments #127, #131, #133, #135, and #137.

**#80 Public Concern: The Final EIS should consider global warming impacts on vegetation and logging impacts on local climate.**

The DEIS mentions climate and its effect on vegetation (DEIS 3-27). How does logging in the project area and other areas affect the climate downwind from these sites? How is global warming expected to impact vegetation?

**Response:** Dead trees do not transpire. The removal of dead trees or trees expected to die would have no effect on climate downwind from the project area. Changes in temperature extremes (global warming or global climate change) would affect vegetation to varying extents. Some species, such as lodgepole pine, are generalists and can thrive at a wide range of temperatures, whereas western larch can tolerate a smaller range of conditions (USDA Forest Service 1990). Managing for a diversity of vegetation conditions and species across the landscape (which we do strive for in our regeneration efforts in the Moose fire area) seems a prudent way to address the uncertainties of the future and provide the forest with the greatest degree of adaptability and resiliency.

**#81 Public Concern: The Final EIS should clarify the management direction for thinning in the Coal Creek and Glacier Institute areas.**

The FS claims that stands near Coal Creek and Glacier Institute are characterized by dense conditions (DEIS 3-17). Earlier in the text the FS claimed that conditions for the area were for the most part within the natural range of variability even before the fires. Fires burned through both of these areas, and probably cleared out much of the dense growth. Are these conditions in these areas actually so radically different from other areas that fuel reduction is needed? If so, why are these areas different from the majority of the project area as far as vegetation conditions? The FS states that only dead trees and trees most likely to die would be logged in the cutting units on DEIS 3-18 and elsewhere. What proportion of trees in the units are these? What is "most likely to die?"

**Response:** The DEIS and FEIS clearly describe the purpose behind the fuel reduction treatments (Chapter 2, description of alternatives: Chapter 1, purpose and need). They consist largely of dense stands of dead, fire-killed or injured lodgepole pine. When they eventually fall, they will create deep, jack-strawed fuel conditions. This condition will certainly be occurring in various areas all across the Moose Fire area; however, the proximity of these particular areas to private lands, Glacier Institute and campground facilities is the concern. There is always the potential for a reburn within the fire area, and in the event this happens, reducing the fuels in these areas would allow higher probability of protecting these sites. Refer to discussion in Chapter 3 of the EIS, under Fire and Fuels. "Most likely to die" refers to the post-fire mortality guidelines, which would be applied to the salvage harvest. Also refer to the responses to comments #78, #84, #86 and #110.

**#82 Public Concern: The Flathead National Forest should provide citations for research referenced in the Final EIS.**

According to the DEIS, "research has shown that most fire-killed trees are on the ground within 10 years regardless of adjacency to salvaged trees" (DEIS 3-22). What research? Is such a blanket statement true under all conditions?

**Response:** The citation is on page 3-17 of the DEIS.

**#83 Public Concern: The Final EIS should clarify state versus federal post-fire salvage sale regulations.**

Why is the State of Montana able to immediately salvage log and keep ESA/Environment in mind, and federal land can't?

**Response:** The State of Montana was not able to immediately salvage log their portion of the fire area although the hazard trees that were felled adjacent to roads during the fire suppression were removed over the past winter (the

Forest Service also salvaged fallen hazard trees adjacent to roads during the winter). A second timber sale of trees located away from existing roads just recently sold. The State of Montana is required to analyze the effects of logging based on the requirements of the Montana Environmental Policy Act (MEPA). The state conducted 2 salvage sale environmental analyses in the fire area over the past year; their 2<sup>nd</sup> analysis was just completed a few months ago. The fire affected approximately 6800 acres on state lands and affected over 35,000 acres on national forest system lands so just the size of the landbase alone has resulted in a more complex analysis on federal lands. In addition, national forests are required to follow the National Environmental Policy Act which has more stringent requirements than MEPA. We are also were required to analyze the actions of road management in order to meet Flathead Forest Plan requirements which is an additional action the state did not tackle. It is also important to note that the Endangered Species Act has more stringent requirements for federal agencies than it does for states.

**#84 Public Concern: The Final EIS should provide an analysis of impacts resulting from the proposed mortality guidelines.**

In fact, these mortality guidelines allow Douglas fir to be considered dead or dying with 60% linear crown kill (i.e., about 70% crown volume kill) and 25% cambial kill. See DEIS, App. B-5, Tables 1 and 2. In fact, the far right column of Table 1, in combination with the left column of Table 2, makes clear that these mortality guidelines allow mature ponderosa, larch and fir to be considered "dead and dying" with no crown kill and about 50% cambial kill. We note that "a tree must be completely girdled to die from cambial damage alone". Wyatt et al, "Fire Induced Tree Mortality in a Colorado Ponderosa Pine/Douglas fir Stand", Forest Science, Vol. 32, No. 1, pp. 55-56 (1986). Clearly, according to the Forest Service's own science, which was developed through studies of conifers in the northern Rockies (mostly Montana), most of these trees will survive such burns long-term. The DEIS is fatally flawed due to its failure to divulge this and analyze the impacts of removing so many live, viable trees—both in terms of habitat damage and increased future fire severity from the removal of the largest, most fire-resistant trees. . . .

**Response:** The Post-fire mortality guidelines are considered conservative for most species, and although some trees that may have lived would be taken, we would not remove large numbers of "live, viable trees". The Post-fire mortality guidelines are based securely on the scientific research, and are acknowledged to be an informed estimation of predicted mortality, which is the best that can be done. Refer to Appendix B of the FEIS. Refer also to responses to Comments #49 in particular, but also #110, #133, and #137.

**#85 Public Concern: The Final EIS should disclose potential contributions to the severity of the Moose Fire from past larch harvest.**

It is stated that larch was the historically dominant tree species in the south half of the fire area and much of the original mature larch was taken out during timber harvests in the 1960's, 1970's and 1980's (page 3-14). To what extent did the earlier harvest of these old mature larch, which are often more fire resistant, contribute to the severity of the moose wildfire?

**Response:** Fire severity can be a function of a variety of factors, not solely forest structure. Duff depth, fuel loadings, fuel moistures, topography, wind, temperature, humidity, etc. can all interact to influence fire behavior and its resulting effects to vegetation. The Moose Fire was wind driven and burned during drought conditions. Even moist riparian areas with 300 – 500 year fire intervals experienced stand-replacing fire severities, with nearly all trees killed. Harvest of mature larch may have contributed to the lack of seed source for natural regeneration over portions of the fire area; however we will never know if some or even any of these larch would have survived the Moose Fire. Harvest of the larch (and other species) has contributed to the lack of large diameter snag habitat in some portions of the fire area, and this has been addressed in the Snag section of Chapter 3. Snag retention prescriptions are developed with this situation in mind.

**#86 Public Concern: The Flathead National Forest should re-evaluate its assertions regarding fire severity.**

The DEIS classifies stands experiencing high severity and moderate severity fires as having the same impacts (DEIS 3-16 and 17). But is this the case? What is the basis for the statement that subsequent mortality "is impending" in lightly burned spruce

and fir stands (DEIS 3-17)? How many trees will survive? How many will decline and later survive? This gloom and doom approach fails to acknowledge that many trees will undoubtedly survive and that fires of varying intensities are natural occurrences in the stands. Nature is equipped to deal with these occurrences.

**Response:** As stated on page 3-16 of the DEIS, stands experiencing high and moderate severity provide growing space for plant life. It does not say they have the same impacts. In stands burned at a moderate severity, some trees will die, creating “gaps”, where sunlight and increased moisture availability are conducive to new growth. As stated on page 3-17 of the DEIS, mortality is impending in spruce and subalpine fir stands because of those species’ susceptibility to heat (Miller 2000). The morphology of the bark of spruce and alpine fir trees is very different from that of western larch, ponderosa pine, or even Douglas-fir. Heat from a ground-fire through thick dry duff easily penetrates the thin bark of spruce and subalpine fir and kills the cambium (the living, inner bark of the tree). It often burns and kills the root system as well. Because these trees are effectively “girdled” by the fire, very few will survive, even though food reserves within the tree will maintain a full green crown for a short time immediately after the fire. These trees are also the most attractive to spruce bark beetles, as experienced in the Little Wolf Fire on this Forest (Gibson et al 1999). Refer also to Chapter 3 discussions under the sections on Douglas-fir and Spruce bark beetles for information on the relationship of bark beetles and fire. Refer to Chapter 3 under the section Fire and Fuels for discussions on the natural role of fire in this area.

#### **#87 Public Concern: The Final EIS should analyze pre-fire old growth conditions.**

Amendment 21 indicates that prior to the fire, late seral habitat was well below the 75% of the historical range for subalpine, montane, and lower montane terrestrial community groups in the North Fk. Flathead subbasin (Am. 21 FEIS,41). Since the fire occurred some of this habitat may be at even lower levels. How can the FS ensure that viable populations of old growth species are maintained on the FNF and project area? How can the FS ensure that adequate old growth habitat for old growth dependent species exists in the FNF and project area?

What is the difference between stand initiation and grass/shrub and non-forest habitat (DEIS 3-11)? To what degree does stand initiation stage habitat provide transitory or longer lasting habitat for species that depend on this kind of habitat? . . . The last sentence at the bottom of DEIS 3-64 indicates that old growth and mature forests once dominated the vast majority of the watershed. What were pre-fire conditions? Have conditions changed significantly?

**Response:** The project would not affect old growth or late-seral conditions, because no salvage activities are proposed in any stand that meets old growth or late-seral definitions. Non-forest habitat is rock, water, administrative sites, gravel pits, and roads. Grass/shrub is natural meadows or shrub riparian areas. Stand initiation habitat is where coniferous forest is temporarily and dynamically in an early successional stage, either from harvest or from stand-replacing fire.

The point being made on DEIS page 3-64 was that much of the Big Creek watershed had not experienced a stand-replacing fire for over 200 years, so many stands were at least that old prior to harvest activities beginning in the 1950’s. Pre-fire conditions were illustrated on DEIS page 3-11 in figure 3-1, and the changed condition is illustrated in the following figure, 3-2. These conditions are also disclosed in the FEIS.

#### **#88 Public Concern: The Final EIS should explain effects to old growth criteria in logged areas.**

The analysis claims that structural stages do not change at all on DEIS 3-23. What percentage of acres could be affected by logging? How will old growth criteria be affected in logged areas?

**Response:** The tables on page 3-23 of the DEIS display the structural stages where salvage logging is proposed, by percentage. Structural classes are based on the live component. The stand replacing Moose fire reverted these stands to a stand-initiation phase. Salvaging dead trees and those expected to die would not change the structural class.

One unit (Unit 66) thought to retain old growth characteristics was found upon field surveys to have substantial mortality from the Moose Fire and has moved to the understory reinitiation phase (project file exhibit O-1).

**#89 Public Concern: The Flathead National Forest should maintain viable populations of old growth dependent species at levels from genetic to regional.**

Proper management of the old growth resource would include making sure the old growth that is designated represents all types in the proper proportion, size, and spatial relationship to maintain viable populations of old growth dependent species. Components of biodiversity should be examined at all levels, including genetic, species, ecosystem, landscape, and regional.

**Response:** The question of whether the proposed action or alternatives to it would affect population viability of species dependent on old growth is a good one. However, the only consideration that was contained in the DEIS for salvaging in old growth was about 30 acres in unit #45. The effects analysis DEIS (3-24) indicated that even with treatment that the stand would be expected to continue to function as 'late seral' after treatment. However, field review of this unit in the autumn of 2002 showed that mortality levels are extensive within most of this unit, with only the lower portion retaining any old growth characteristics. Most of the stand does not meet the definition of old growth or late seral, and is currently in the understory reinitiation (seedling/sapling) stage. Therefore, the Moose Post-fire Project would not salvage log in any stand that currently has late seral/old growth conditions and the project would not affect viability of old growth dependent species (project record O-1 and Rg-5). Most of the old growth habitat that previously existed in the burned area was greatly reduced by the Moose Fire (DEIS 3-10 and FEIS 3-15). The DEIS (3-97) and FEIS stated "The Moose Fire eliminated habitat suitability for all old growth species."

**#90 Public Concern: The Flathead National Forest should describe old growth characteristics in the burn area.**

Measure and disclose the sizes of old growth stands in the area. Tell how much habitat each block provides for interior old growth dependent species, considering the edge effect from natural and manmade openings including roads.

**Response:** There are approximately 387 acres of late seral habitat within the portion of the Moose Fire in Big Creek. Old growth will not be affected by the proposal and is no longer an issue.

**#91 Public Concern: The Final EIS should clarify information regarding old growth.**

The DEIS discusses old growth (late seral/old forest) habitat beginning on DEIS 3-10, but it is not clear what surveys and analysis were the basis for the statements made therein. The DEIS is generally vague and unspecific. Please disclose the actual amount of old growth habitat and the recruitment area habitat that exists in this project area where such areas are located with respect to the proposed activities and other activities having potential cumulative impacts. Please disclose how old the recruitment habitat now is, if any exists. Please disclose whether the amount of existing old growth meets standards and other required levels for old growth. Are standards met here, throughout the FNF, and throughout the various ecosystems in the project area? Are conditions on the low end of the range or near it? What past, present and reasonably foreseeable activities/events could lead to shortages of old growth? Are conditions on the low end of the natural range of variability or near it? What past, present and reasonably foreseeable activities/events could lead to shortages of old growth? What are the long-term trends for old growth in the 20th century and early 21st century? Please disclose whether there is adequate old growth in the project and for all types of underrepresented types of old growth and ecosystems. Please disclose how old the proposed cutting units are and whether they are, or will, in the foreseeable future, qualify as old growth. Please disclose the amount of large trees, old growth trees, mature trees and other high quality wildlife trees will be removed from the cutting units. Please disclose how the proposed activities will impact old growth and similar attributes, snags, large snags, large woody debris on the forest floor, large woody debris in or near streams, nurse logs, hollow trees, den trees, nest trees, pit and mound topography, tree fall gaps and multiple tree fall gaps in the project area. Please disclose how the project will impact old growth associated species habitat, and mature forest associated species habitat in the project area. Please disclose the amounts, locations, sizes, and connectivity of all old growth stands in the Compartments included in the project area. Disclose whether it is actual old growth (meets all Region One criteria) so that we may know whether or not you are proposing logging or other activities in old growth or recruitment old growth. Please disclose the methodology used whether actual on-the-ground inventories took place and how thorough such inventories were.

**Response:** The concerns in the above comment have been addressed in detail in the DEIS and FEIS. The amount and location of old growth habitat is described on pages 3-15 in the DEIS, and in the FEIS. Specific “recruitment areas” have not been identified. The Flathead Forest Plan contains standards for management of late seral stage stands that facilitate increased patch size and maintenance of important legacy components (snags, downed woody material) throughout the forest matrix (Forest Plan Amendment 21). These standards are being met with all alternatives (see Chapter 3 of the FEIS). The structure of stands within the fire area are disclosed in Tables 3-4, 3-5, and 3-6 in the FEIS. The Flathead Forest Plan does not contain numerical standards for old growth. Maintenance and restoration of late seral stands is a Forest Plan requirement. As stated in the DEIS and FEIS, all Forest Plan standards relating to late seral stands would be met with all alternatives. There are no known ongoing or foreseeable actions that lead to shortages of old growth. However, should bark beetle populations build to epidemic levels and expand outside the fire area, existing old growth stands with large diameter Douglas-fir and spruce trees could experience levels of mortality to these trees that would revert them from late seral to the stand initiation or understory reinitiation stage. As stated in the DEIS and FEIS, the Moose Post-fire project would have no effect on existing (post-fire) old growth or late seral stands, since no salvage activities are proposed in any stands with these characteristics. Refer to Chapter 3 of the FEIS for a more in-depth discussion of these issues.

**#92 Public Concern: the Final EIS should consider current science regarding old growth.**

Jack Ward Thomas, Leonard F. Ruggiero, R. William Mannan, John W. Schoen, and Richard A. Lancia in “Management and Conservation of Old Growth Forest in the United States.” (1988 Wildlife Society Bulletin. 16:252-262) stated that “...the vest probability of success is to preserve all remaining old growth and, if possible, produce more.” Please address this statement made by a group of scientists that includes the former Forest Service Chief as it pertains to old growth management in this proposal area. .

**Response:** See response to Comment #91.

**#93 Public Concern: The Final EIS should include site-specific Biological Evaluations for the project area.**

It has been well established that site-specific Biological Evaluations (BEs) must be prepared for all actions such as this.

**Response:** The DEIS (3-96 to 98) and the FEIS compare the habitat needs of each listed sensitive species with the existing condition within the Moose Fire area and concluded that only three species (black-backed woodpecker, boreal toad, and wolverine) could potentially be affected by the proposed project. The effects analysis and determinations (DEIS 3-123 to 132 and the FEIS) constitute the ‘biological evaluation.’ The rationale for not including a majority of sensitive wildlife species in the ‘effects analysis’ was included in the DEIS (3-98) and FEIS, and further information on these species can be found in the Project Record (Rs-6 to Rs-14).

**#94 Public Concern: The Flathead National Forest should ensure adequate management direction for old growth.**

Have all appeals of amendment 21 for the FNF been reviewed by the region? Have all standards and guidelines regarding old growth forests gone through the full NEPA process? The current management direction for old growth forests for the FNF could be inadequate.

**Response:** Amendment 21 was approved in 1995. All appeals were successfully resolved, and the Forest’s decision upheld. There are no outstanding appeals of Amendment 21, and Amendment 21 went through the full NEPA process. Amendment 21 provides the management direction for old growth on the Flathead NF. Old growth will not be affected by this proposal. Also, refer to the response to comment #91.

**#95 Public Concern: The Flathead National Forest should log old growth in the burned area.**

No “old-growth” should be preserved in the cutting units because it is preserved in the areas that will not be cut

**Response:** Late seral habitat within the Moose Fire in Big Creek has been reduced to about 387 acres. These patches may be important islands of refuge to wildlife, as well as a seed source to adjacent areas with complete mortality to overstory trees. Logging old growth is not part of the purpose and need of the project and the alternatives presented in the FEIS avoid all existing post-fire late seral and old growth stands.

**#96 Public Concern: The Flathead National Forest should do on-the-ground verification to identify old growth habitat.**

In the identification process of old growth habitat, we would like to see the analysis team perform on-the-ground verification of areas chosen from photo interpretation and database examination. This is especially important in identifying areas appropriate for old growth designation to make up for any deficits, to meet forest plan standards and to meet future old growth habitat needs.

**Response:** On the ground verification was completed for all stands identified as late seral with proposed harvest (project record O-1). Units 66 and 45/46 experienced more mortality than originally estimated, leaving only small pockets (1 acre or less) of late seral, and changing the rest of the stand to either the understory reinitiation or stand initiation phase. This is reflected in the FEIS. These stands no longer provide late seral habitat. Small areas of late seral adjacent to units are not proposed for salvage.

**#97 Public Concern: The Final EIS should delineate connectivity corridors between old growth stands.**

Several alternatives log large trees, and green trees will be cut to facilitate ground-based logging. The DEIS does not disclose where connectivity will be maintained between the old growth stands that are left.

**Response:** As Map 3-2 in the DEIS illustrates, the patches of late seral within the fire are isolated with a large amount of stand initiation between them. There are not existing connectivity corridors between remaining old growth stands, but the forest is dynamic and cover will return. The Moose Fire was a naturally-occurring disturbance event – the size, severity and mortality experienced are “normal” for stand-replacing events in this ecosystem. Adherence to Forest Plan direction (Amendment 21) regarding retention of existing late seral stands and maintaining snags and downed woody material across the landscape will ensure that connectivity will recover over time.

**#98 Public Concern: In order to protect old growth, the Flathead National Forest should preserve late seral acres.**

Late seral acres are relatively low. Since old growth acreage, a subset of late seral acreage, is undoubtedly also low, then other structural classes might need to be protected for future old growth recruitment. The FS does not consider this (DEIS 3-23).

**Response:** None of the alternatives presented in the FEIS propose salvage in stands that meet the definition of old growth or late seral. In regard to other structural classes, dead (or dying) trees do not become future old growth, and that is what we propose to remove. The live trees retained in salvage units may contribute to the large-tree components as stands move towards late seral over time. A few severely fire-affected trees that we expect to die may have lived. Removal of these trees will not affect the ability of these stands to eventually achieve late seral conditions.

**#99 Public Concern: The Flathead National Forest should revegetate riparian areas.**

It is suggested that riparian areas and stream banks along eroding and sensitive reaches of Big Creek and its tributaries be considered for planting with shrubs and trees to provide bank and channel stability, sediment filtration, shade, woody debris recruitment, and other functions. The EPA supports planting of shrubs and trees in these riparian areas and along eroding stream banks to accelerate the reestablishment of healthy communities of riparian vegetation. We want to encourage the Forest Service to consider additional seeding and revegetation on burned areas where vegetative recovery is slow. Rapid establishment of

vegetation and ground cover in severely burned areas is necessary to reduce erosion and sediment transport. Establishment of woody vegetation along the steeper, deeply incised perennial and ephemeral stream bottoms that burned with high burn severity is particularly encouraged. We note that the Big Creek Water Quality Restoration Plan recommends applying revegetation, drainage, and stabilization treatments to stream bank slumps in the Big Creek drainage (e.g., rock or tree stump armoring, barbs). . . . Also would it be feasible to plant vegetation along the steeper, deeply incised perennial and ephemeral stream bottoms on Demers Ridge, and the unnamed drainage east of Skookoleel Creek (page 3-186) that burned with high burn severity? Rapid establishment of woody vegetation and ground cover in such areas would reduce potential channel erosion. We note that the Big Creek Water Quality Restoration plan recommends applying revegetation, drainage, and stabilization treatments so stream bank slumps in the Big Creek drainage (e.g., rock or tree stump armoring, barbs).

I would like to see an aggressive tree planting program centered around riparian habitat, along the North Fork road around the confluence of the North Fork River and Big Creek and areas adjacent the two burnt sets of avalanche chutes in the Big Creek drainage. I think it is better to get old growth started as soon as possible for grizzly bear and bull trout protection.

**Response:** The high burn severity sites, especially in the riparian zones were seeded last fall (2001). Field examination of the fire area in general and the riparian sites specifically show two trends. All of the riparian sites are revegetating rather well, especially with forbs and shrubs. The upland low burn severity, moderate burn severity, and northerly aspect high burn severity sites are also naturally revegetating quite rapidly. The southerly aspect high burn severity sites are not recovering with vegetation cover as rapidly as the other sites, but probably do not need additional seeding (Shearer 1989).

**#100 Public Concern: The Final EIS should establish a post-fire management plan to minimize regrowth of lodgepole pine.**

After logging, a good management plan for the moose fire burn area should be put into place to minimize to regrowth of lodgepole pine to reduce future fires, so it does not end up like the red bench fire area with thousands of lodgepole pine per acre.

A good management plan needs to go in place to minimize the regrowth of the Lodge Pole in that area so the trees have space to grow for future logging.

**Response:** Planting of native species other than lodgepole pine is proposed to introduce some diversity into units where little or no seed source is available. Overstocking of lodgepole pine is recognized as a potential problem for future productivity and species diversity.

**#101 Public Concern: The Final EIS should clarify why ponderosa pine planting provisions have been omitted from Alternative 4.**

It is also not clear why the planting of Ponderosa pine on 95 acres for species diversity is deleted from Alternative 4 (page 3-21)?

**Response:** In response to several issues, the total acres of salvage were reduced in Alternative 4. Some of the acres dropped were those considered suitable for planting of ponderosa pine.

**#102 Public Concern: The Final EIS should justify the proposal to plant ponderosa pine and White pine in the burned area.**

It is stated that Ponderosa pine and western white pine are on the limit of their ecological range and this watershed does not contain a large amount of habitat suitable for their development (page 3-7). Yet is stated that conifer planting for reforestation (1533 to 1897 acres proposed conifer planning among various alternatives) will include Ponderosa pine and western white pine (page 2-16). Is it appropriate to plant much Ponderosa pine and western white pine if the area does not contain suitable habitat for their development?

**Response:** Stating the area “does not contain a large amount of habitat” means that it does contain *some* suitable habitat for ponderosa pine and western white pine. The occurrence of this habitat is limited in this drainage, which is the main reason we propose to plant it (in mixture with other suitable species). The fire has reduced or eliminated seed source for these species (as well as the effects of white pine blister rust), and it is desirable to manage for a diversity of species in this landscape.

**#103 Public Concern: To ensure successful regeneration, the Flathead National Forest should conduct additional studies.**

Please do studies that consider land types, habitat types, slopes, aspect, etc. for this project, so that there would be assurance of successful regeneration.

**Response:** These factors are taken into consideration for regeneration as a matter of course in developing silvicultural prescriptions.

**#104 Public Concern: The Flathead National Forest should consider implementing tree revegetation efforts on more than 6% of the burn area.**

We support planting native trees in burned areas to accelerate reforestation in areas where natural regeneration is slow. Planting can have the beneficial effect of rapidly reestablishing trees, the primary photosynthesis organisms, which produce the major source of carbohydrates and energy, and planted trees more rapidly recover the soil biotic community, and will hasten the return of foraging habitat for wildlife and security cover for big game. Rapid establishment of vegetation on bare ground also reduces erosion. Would it be appropriate to consider additional seeding and tree planting to accelerate revegetation (only 6% of the burned areas within Big Creek drainage is proposed for planting, yet 44% of the area is [said to] have burned "severely" in the fire, page 3-7).

**Response:** Funds for replanting within previously harvested units have been allocated and replanting is underway. . Revegetation efforts on areas needing immediate attention were undertaken last fall upon recommendations from the Burned Area Emergency Rehabilitation team and subsequent efforts. Native shrubs and grasses, part of natural succession, are already occupying much of the fire area, and seedlings are becoming established.

**#105 Public Concern: The Flathead National Forest should build more roads to facilitate forest resource management.**

In my opinion more roads should be built to facilitate timber harvests, thinning projects and fire suppression.

If you destroy the roads, how are you going to check the health of the area. It can not be checked from the air. Are you going to start the pack trains again and pack in? How are you going to fight fires?

**Response:** Building roads in the fire area is not necessary to meet the Purpose and Need for Action. It is also important to note that new roads in this drainage are not desirable because of soil and water impacts that new roads would cause which would add to environmental effects from the fire. In addition, the existing level of roads is above that allowed under the Forest Plan. In order to meet Forest Plan requirements, we need to remove roads rather than add roads. The effects of fewer roads on the landscape are described in the DEIS in various places; the effects that fewer roads have on timber management is discussed on page 3-20 and 3-21 and the effects that fewer roads have on fire suppression is discussed on pages 3-93 and 3-94.

**#106 Public Concern: To facilitate forest management, the Flathead National Forest should not decommission roads.**

The proposal to decommission from 56 miles to 87 miles of roads is unacceptable. Limiting access of future fire suppression activities and severely limiting future timber management opportunities. Why waste all that timber?

**Response:** The existing road management situation in the Big Creek drainage (which includes most of the fire area on national forest system lands) does not meet Forest Plan requirements for road densities for grizzly bear security (Amendment 19). Road decommissioning is necessary to address grizzly bear security needs as well as other fisheries and aquatic habitat concerns. We are bound by regulations and the objectives and standards of the Forest Plan, which includes Amendment 19. Forest Plan standards and the terms and conditions in the USFWS biological opinion are not discretionary. We must proceed toward meeting those objectives with this project or we will be “taking” grizzly bear habitat, which is a violation of the Endangered Species Act.

The effects of fewer roads on the landscape are described in the DEIS in various places; the effects that fewer roads have on timber management is discussed on page 3-20 and 3-21 and the effects that fewer roads have on fire suppression is discussed on pages 3-93 and 3-94.

**#107 Public Concern: The Flathead National Forest should re-evaluate impacts to tree planters from decommissioning roads.**

The FS argues that tree planters would be forced to walk a longer distance due to decommissioning/watershed restoration (DEIS 3-25). When is tree planting planned? Actually decommissioning is delayed for many years after the logging occurs, so this might not be the case.

**Response:** The road decommissioning schedule was developed based on funding constraints, not the need for post-project access. Road decommissioning would be completed according to the schedule whether post-harvest activities are completed or not. Salvage units would be monitored for regeneration success at years 1,3, and 5. If units expected to naturally regenerate are failing to do so, planting will be scheduled to ensure adequate stocking levels in accordance with NFMA. Many roads will have been decommissioned by year 5, so it is entirely possible tree planters would have to walk to reach units if an action alternative is chosen.

**#108 Public Concern: In order to preserve forest resources, the Flathead National Forest should decommission roads.**

Instead of building more roads and causing more distress to an already impaired forest, let's decommission existing roads and allow the fractured forest to heal herself.

**Response:** Decommissioning roads is an activity that was included in all of the action alternatives in the DEIS; there is no road construction proposed under any of the alternatives. Even the temporary roads were dropped in the FEIS, as the salvage units where temporary roads were proposed have been changed to winter logging, and snow roads will provide needed access.

### ***Vegetation***

**#109 Public Concern: The Final EIS should assess resource impacts resulting from variable logging intensities.**

The FS provides flexibility in "location of salvage/leave tree patches" (DEIS 3-56). Does this mean that some cutting units or portions of cutting units could receive heavier cutting than other units? What effects on vegetation, soils, watersheds, wildlife and other resources would this have?

**Response:** There would be variability in logging intensity and residual tree characteristics and pattern over all units, because of the natural variation in fire severity, species, size classes and forest structure that exists across the landscape. Diversity in forest conditions across the landscape is a desirable condition and is more reflective of what occurs naturally. The analysis of snag habitat in Chapter 3 of the EIS recognizes the value of the diversity that would be created by implementation of the treatments and snag retention guidelines that would be applied.

**#110 Public Concern: The Flathead National Forest should prepare a supplemental Draft EIS to reflect tree mortality information found in the Stevens and Finney study.**

Significant new information which has arisen since the DEIS was written requires the preparation of a supplemental DEIS on the issue of tree mortality. See 40 CFR 1502.9(c). A new scientific study of tree mortality by one former and one current Forest Service scientist reveals that the survival rates in previous studies have been biased low because these studies invariably examined post-fire survival rates of very small trees, which have far lower survival rates than large trees after a fire. See Scott Stephens and Mark Finney, "Prescribed Fire Mortality of Sierra Nevada Mixed Conifer Tree Species: Effects of Crown Damage and Forest Floor Combustion", In press in *Forest Ecology and Management*. The study found that, for conifers 20 inches in diameter with 90% crown volume kill from fire, approximately 60% of ponderosas, 75% of incense cedar, and 40% of white fir survived long-term. Id. Survival rates are expected to be even higher for larger size classes.

**Response:** Pertinent information from this study has been incorporated into the Post-fire mortality guidelines in Appendix B of the FEIS. Though this study does add to the increasing body of knowledge on the effects of fire on trees and predicting their mortality, the forest type and species evaluated are the mixed conifer forest of the Sierra Nevada, quite different from the northern Rocky Mountain cool/moist forest types of the Moose Fire area. Ponderosa pine was the only species evaluated in the referenced study that occurs in the fire area. White fir is somewhat equivalent of our true firs (subalpine fir); however it tends to be more fire resistant than its associates at higher elevations (USDA, Forest Service. 1990. *Agricultural Handbook 654. Silvics of North America. Vol. 1. Conifers*). In some limited areas of the higher elevation central Rocky Mountains and Sierra Nevada range, associated species includes subalpine fir. Taking the applicable information into account, this study does in fact support the statements and guidelines developed in the Moose Post-fire mortality report. It substantiates that ponderosa pine is highly tolerant of crown scorch, due most likely to its large, well-protected buds, and true firs are not as tolerant. The commenter incorrectly used the term "crown volume kill", and should instead have used percent crown volume scorch (PCVS), the actual variable that Stephens and Finney measured. It is important to distinguish between these two (as is noted in the Moose Post-fire mortality guidelines) because crown scorch (as measured only 4 weeks after the fire in the Stephens and Finney study) is not necessarily a measure of crown kill. This is for the very reason referred to regarding ponderosa pine: some species are very tolerant of scorch, regrowing foliage in portions of the crown that were scorched. As the study discusses, this is also what happened in the case of giant sequoia. It also appears that incense cedar (for which we have no equivalent species in the Moose Fire area) has high tolerance and the ability to recover from extensive crown scorch.

The Moose Post-fire mortality guidelines focus on crown kill as the variable, not crown scorch. They also are designed to be quite conservative for most species in this regard, and accept a relatively high degree of crown kill before the tree would be potentially removed for salvage (up to 90% kill in larger larch, >14" dbh, and 70% kill in Douglas-fir and other species). In addition, all alternatives would leave all ponderosa pine and (at a minimum) all >20" larch, whether live or dead. Depending upon the individual unit, and on the alternative, even greater numbers of the larger diameter larch trees, live or dead, would be left (i.e. 18"+ DBH larch). The Moose Post-fire project adequately considers and evaluates the issue regarding the retention of live trees, and applies a sound approach to determining those trees most likely to survive and thus not be salvaged.

**#111 Public Concern: The Final EIS should clarify figures for various logging and treatment options.**

The tables summarizing treatment alternatives show total acres logged/salvaged and also show in parentheses another amount of acreage for "acres treated." The different acreage figures for "acres logged/salvaged" and "acres treated" are unclear. For example, Table 2-1, page 2-17, shows 3,721 acres to be salvaged in Alternative 2, with 3,024 acres treated. Does this mean that there are 3,721 acres on which there will be some timber harvest, and that 3,024 acres include harvest for beetle control and/or fuel reduction, whereas 697 acres of harvest are proposed only for recovering merchantable timber?

**Response:** Given the improved and field-verified information we now have, the FEIS has simplified the description of units and treatments, and there is now only reference to actual acres where salvage will occur.

**#112 Public Concern: The Final EIS should clarify the differences between two-aged and even-aged logging.**

Statements on age class differences for salvage (even aged) logging and two age class logging on DEIS 3-25 and 26 differ from DEIS 3-23 assumptions regarding structural stage differences. Why is this? Why isn't two-aged logging considered even aged logging?

**Response:** The EIS does not make any statements regarding “two-aged logging”. It does discuss the resulting two-aged structure in stands that experienced a low to moderate severity fire, leaving a cohort of live trees. Residual green trees constitute one age class, and newly regenerated trees constitute a younger age class, thus “two-aged.”. A stand that experienced high severity fire and has resulting high mortality to conifers is now an even-aged stand, at the stand initiation phase. These stand structure descriptions hold true, regardless of salvage activities that remove only the dead and dying trees.

**#113 Public Concern: The Final EIS should acknowledge that human disturbance can contribute to forest disease and insect infestation.**

The DEIS does not consider research that indicates logging, roads, and other human caused disturbance promote the spread of tree diseases and insect infestation. For example, multiple studies have shown that annosus root disease (*Heterobasidion annosum*, formerly named *Fomes annosus*), a fungal root pathogen that is often fatal or damaging for pine, fir, and hemlock in western forests, has increased in western forests as a result of logging (Smith 1989). And researchers have noted that the incidence of annosus root disease in true fir and ponderosa pine stands increased with the number of logging entries (Goheen and Goheen 1989). Large stumps served as infection foci for the stands, although significant mortality was not obvious until 10 to 15 years after logging (id.).

**Response:** Salvage logging of dead and dying trees within stands composed predominantly of dead/burned trees would not contribute to any increase in forest insect or disease infestation. Great attention is being given to protection of soils made especially vulnerable by the fire (i.e. helicopter logging, winter logging, etc). Little soil disturbance or compaction is predicted, which in turn would prevent any damage to and weakening of the root systems of any remaining live trees (refer to analysis in Soils section of EIS). In the case of Douglas-fir and spruce bark beetles, our proposed actions should in fact decrease infestation levels of these insects in and around the Moose Fire area, rather than contribute to it.

**#114 Public Concern: The Final EIS should justify limiting the vegetation resource analysis to 58,500 acres.**

What is the justification for using the 58,500 acre analysis area for vegetation resources (DEIS 3-6)? There were/are no impacts to vegetation outside of this area? The vegetation in this area is somehow not connected to the vegetation elsewhere? No vegetation treatments are planned, occurring or foreseeable outside of this area? .

**Response:** The description of and reasons for the vegetation analysis area have been described in the Vegetation section of Chapter 3 in the EIS, under Section A 1. This area is inclusive of the landscape analysis area utilized for the Ecosystem Analysis conducted at the Watershed Scale (the Big Creek EAWS) completed just before the Moose Fire. The EAWS analysis evaluated vegetative conditions at a scale that allows a more appropriate landscape look at ecosystem processes, vegetative conditions currently and historically, and desired conditions based on ecological concepts and Forest Plan objectives. The Moose Post-fire project proposes no vegetative manipulations outside this area (except for a small fuels management unit in lower Coal Creek), and thus it is deemed very appropriate that this same landscape analysis area should be utilized for the Moose Post-fire project. It allows for direct comparison of pre-fire vegetation conditions and historical conditions with current post-fire conditions. Certainly the fire has affected the vegetation in a larger area that includes much of Coal Creek. However, the effect to vegetation in the entire fire area has already been evaluated in the Moose Post-fire Assessment document, which is part of the project record for this EIS.

**#115 Public Concern: The Final EIS should describe proposed salvage logging activities.**

We request a thorough description of the size, species, and distribution of trees that will be cut. We request an explanation of how they will be yarded. The spacing of trees may negatively impact the ecosystem integrity of the units through alteration of wildlife habitat, soil conditions, and microclimate.

**Response:** Appendix A of the EIS describes the treatments and expected post harvest vegetation conditions. The Environmental Consequences section in Chapter 3 of the EIS is where the potential effects of the harvesting and resulting conditions are documented for each affected resource. The mortality guidelines contained in Appendix B of the FEIS and Vegetation section in Chapter 3 of the FEIS describe the trees that are proposed for salvage.

**#116 Public Concern: The Flathead National Forest should allow firewood cutting in the burn area.**

A simple solution for the burned timber would be to open the closed area to firewood gathering. If not, the timber will be destroyed in a short amount of time by the decay and bug kill.

**Response:** Firewood cutting will be prohibited in the fire area until any salvage projects are completed, in order to allow removal of the trees as more valuable sawlogs rather than firewood (if an action alternative is selected). Firewood cutting will eventually be allowed adjacent to open roads in the fire area.

**#117 Public Concern: The Flathead National Forest should conduct thorough plant and wildlife surveys in the burn area.**

Thorough wildlife surveys, over an appropriate period of time, should take place. Thorough plant surveys, over an appropriate period of time, should take place. These surveys should be conducted by appropriately trained personnel and should take place at times of the year when applicable plant [and wildlife] species are likely to be detectable and identifiable. The analysis should disclose whether any factors could have affected the ability of surveyors to detect applicable species and should disclose whether any species could have been present, but may have been undetected.

**Response:** Surveys for sensitive plant species and noxious weeds have already occurred within the fire area, concentrating on those areas proposed for salvage, road decommissioning, or any other potentially ground disturbing activity. Trained personnel have conducted these surveys, and they were conducted during appropriate seasons. Monitoring of wildlife use within the fire area has occurred, and will continue to occur, as deemed appropriate and necessary.

**#118 Public Concern: The Final EIS should explain how on-the-ground effects are determined from satellite images.**

The FS states that satellite images were used to analyze vegetation effects (DEIS 3-6). How accurate are these at determining the actual on-the-ground effects?

**Response:** The classification based on satellite image change detection was verified by sampling the array of conditions on the ground. The satellite image underrepresented mortality because it could not detect ground fire that burned roots but left green crowns immediately after the fire. Field surveys were used to update the GIS layer with verified information. It was not reasonable or possible to verify every pixel of the satellite image.

**#119 Public Concern: The Flathead National Forest should analyze forest floor conditions in the project area.**

It is incongruous that, while professing EM, the DEIS myopically focuses on trees, largely disregarding some vital forest parts, particularly components that ensure forest dynamics and permit tree growth. Conditions of the forest floor are treated superficially and without on-ground data from the project area. On-ground evaluation surveys for the project area are necessary

to define the first line of watershed development and maintenance, that being the organic layers on the forest floor. It is here, in the litter, duff and humus, that moisture and considerable energy is gently captured, filtered and gradually released to underlying soil strata. If these indicators are depleted, further biomass removal activities will exacerbate the situation and can lead to long-term impairment of the forest resource. Without it, rainfall soon compacts and often concretes the surface leading to the first stages of runoff and erosion. The DEIS does not provide sufficient description of the post-fire condition of the litter, duff and humus for the proposed units and the previously logged units in the cumulative effects area. Without on the ground surveys, indirect, direct and cumulative effects to the soils cannot be ascertained. This same set of layers is the principal abode of mycorrhizal fungi, which are essential, both for successful establishment of tree seedlings and later tree growth. When the duff and humus layers have been reduced or eliminated, by past extensive and repeated logging, and post-logging slash bums, studies have shown very poor survival among planted seedlings. The Project area has been extensively clear-cut and logged. In much of the previously logged area ground-based log removal methods were used that not only destroyed the organic layers but also permanently changed the mineral soil structure beneath. Regeneration logging methods such as clear-cutting also have an adverse effect on mycorrhizal production. The amount of duff and humus loss relative to mycorrhizal content also has not been measured on ground and the cumulative effects are thus not disclosed. It is also this set of organic layers that supports a host of microorganisms including those acting as antagonists to pathogenic fungi such as root-rotting fungi. There was little in the DEIS disclosing the diseases that are present and their current levels of activity. A lack of attention to these likely problems is unsuitable in such planning and cannot be omitted if tree EM is being practiced.

**Response:** The EIS adequately considers all these concerns of the commenter. The EIS, Chapter 3, Vegetative Structure, Composition and Timber Resource, both under section 2, Affected Environment, and section 3, Environmental Consequences, describes information on fire severities and its interpretation related to vegetation and duff reduction, successional development that would be expected after the fire on the affected sites, and forest structure/species that existed pre-fire and could be expected after the fire. Conifer trees are the dominant and most obvious plants at most stages of forest development in this ecosystem, and are the focus of these discussions. The condition of the soils, both due to past logging activities and due to the fire, are described in Chapter 3 in the Soils section. Soil surveys in the summer of 2002 have provided site specific information, and the EIS reflects this new information. Salvage harvest methods reflect high concern and attention to soil condition, specifically by requiring low impact logging methods (helicopter and winter logging). Abundant unmerchantable material would remain within all units after salvage, providing both short term protection of soil surfaces and long term maintenance of soil productivity.

**#120 Public Concern: The Final EIS should address the importance of mycological components of forest ecosystems.**

In addressing salvage issues in a post-burn environment, it is essential to the survival of the area as forested land that the vitality of the trees mycological partners are not unwittingly destroyed. Of special concern is *Geopyxis* "species"—these are key symbionts for Doug fir and pine. It can be killed by soil compaction or high (elevated) subsoil temperatures. Salvage logging after a forest fire also dramatically reduces available shade and carbon, heating subsoil temperatures above tolerance levels for the species and depriving the fungus of a good and water reservoir.

**Response:** Mycological components are addressed in the soil section of Chapter 3 in the DEIS and the FEIS.

**#121 Public Concern: The Flathead National Forest should not consider the views of environmental groups regarding timber sales.**

Environmental groups should be excluded from deciding where, when, and how sales should be conducted.

**Response:** The law requires that all members of the public have equal opportunity to comment and be involved in the planning of projects, including timber sales.

**#122 Public Concern: The Final EIS should disclose project helicopter landing sites and their impacts.**

Where would the 10 to 15 helicopter landings be located (DEIS 2-12)? Would they be located in any problematic soils, riparian areas, roadless areas, Wild and Scenic river corridors, important wildlife habitat, visually sensitive areas, trail-or recreation-related areas, or other important areas?..... What will be the impacts of helicopter landings and fueling areas?

The DEIS states on page 2-12 that 10 to 15 areas of approximately 10 acres would be used for helicopter landings. However, location of these 10-15 areas is not disclosed. In order to fully evaluate impacts heli-landing locations should be identified especially if these areas must be logged first.

**Response:** Numerous potential helicopter landing locations were identified on a map (refer to project record), with the expectation that between 10-15 of these landings would actually be used. Exact locations have not yet been verified; however, criteria for selection of possible landing sites include avoidance of sensitive soils, riparian areas, Roadless areas, or any other area considered particularly “sensitive”, as determined by interdisciplinary review. This information has been used by resource specialists in evaluating the effects of landings on the particular resource of concern, as disclosed in the EIS. The timber sale contract would contain clauses that control refueling activities.

**#123 Public Concern: The Final EIS should clarify the source of map 3-2.**

What kind of analysis is Map 3-2 based on? Is this based on the same satellite analysis as mentioned above? What is the accuracy of the analysis used?

**Response:** See response to comment #118.

**#124 Public Concern: The Final EIS should provide information for areas not found on map 3-2.**

What is happening in the Coal Creek watershed and other watersheds where forest structure is not shown on Map 3-2?

**Response:** See response to Comment #114. The Moose Post-Fire Assessment completed prior to this EIS, provides information on resource and vegetation conditions throughout the Moose Fire area on national forest lands. No salvage harvest is proposed at this time in the area outside that shown on Map 3-2.

**#125 Public Concern: The Flathead National Forest should not log healthy trees in the burn area.**

We are property owners in the North Fork area and are aware of plans to salvage log in the Moose post fire project. We also feel strongly that the logging should be truly salvage, and that remaining stands of healthy trees be left.

**Response:** Salvage logging would not remove healthy, undamaged or more lightly/moderately fire damaged trees from the fire area. Guidelines outlined in the Post-fire Mortality document (Appendix B of the FEIS) would be followed in selecting trees for harvest.

**#126 Public Concern: The Flathead National Forest should harvest snags.**

Years ago I gave a program on dead wood and snags to the Kootenai NF and was later invited to show it in Spokane. Other forests contacted me for information on snag plans. In the early part of the last century, snags were fell to prevent future lightning ignitions. During the 1930s Glacier National Park used CCCs to fall snags. We should learn from history and get over the idea they are sacred. Take all that are available, plenty will be left. High stumping some of the larger larch would be adequate in logging units, with an occasional snag left intact. Springboard stumps in the valley attest to the use of larch high stumps.

There do not need to be nearly so many "bird trees" left as the sale allows for. These trees will be future fuel and safety hazards to anyone who is near them when they finally fall over.

**Response:** By the very nature of the salvage action, harvest would predominantly be removing snags (trees killed by the fire) of all sizes but predominantly greater than 10” DBH, because most smaller diameter trees may be

unmerchantable by the time salvage begins. Because we would be removing mostly larger trees, and these trees are particularly valuable to many wildlife and bird species, it is important to leave some of these trees for short and long-term large-diameter snag habitat. IN fact, the Flathead Forest Plan requires retention of adequate snag habitat (Amendment 19). The EIS, Chapter 3, Snags provides a discussion on the values and effects of the proposed salvage on snag habitat.

**#127 Public Concern: The Final EIS should include an alternative that sets an upper diameter limit on trees to be salvaged.**

The DEIS violates NEPA in this regard by failing to analyze a reasonable range of alternatives. The DEIS never even bothered to consider any upper diameter limit on trees that would be removed.

**Response:** Retaining all larch above a certain diameter (18" DBH or 20" DBH depending upon the Alternative and the Units), would automatically leave the largest and most valuable trees available on this landscape. In Alternative 4, burned Douglas-fir >20" would also be left, providing alternative comparisons to a situation where even more of the largest, most valuable snags are left. Refer to the Snag discussion and analysis in Chapter 3 of the FEIS.

**#128 Public Concern: The Flathead National Forest should consider halting current logging and grazing operations in the burn area until impacts from the 2000 fires have been assessed.**

Significantly changed conditions have occurred since the Moose Fire and fire suppression. This should have been reflected in the "Background" and Purpose and Need sections of the DEIS. The FS should consider halting any ongoing logging projects in the fire-affected drainages, to undergo supplementary analysis of the cumulative effects of the fire. The NEPA documents did not analyze the effects of the 2000 fires. NEPA requires you to respond to "changed conditions" by stopping ongoing actions in order to involve the public in considering these "changed conditions." If grazing is permitted anywhere, the FS should also consider halting livestock grazing, in fire-affected areas, since it would be wisest to immediately defer all grazing until analysis indicates that soils impacted by the fire would not be further damaged by livestock. .

**Response:** It appears that the commenter forgot to change the year 2000 to 2001, which would be more pertinent to the Moose Fire and this project. In any case, there are no ongoing logging or grazing operations on national forest lands within the Moose fire area that are affected. The Moose Post-Fire assessment, completed fall of 2001, evaluated the changed conditions within the fire area. The Moose Post EIS incorporated the Post-Fire Assessment by reference.

**#129 Public Concern: The Final EIS should clarify diameter measurement methods for leave trees.**

Page 2-9: Similarly, the arbitrary design criteria of leaving all live and dead western larch over 18" in diameter needs to be revisited: First, where is the "diameter" measured? Breast height? Ground level? Please clarify in the FEIS.

**Response:** Wherever mentioned, "Diameter" refers to "Diameter at Breast Height" (4.5 feet), commonly abbreviated as "DBH". Granted, occasionally we have been remiss in specifying exactly what we mean in the EIS documentation, and we have clarified this in the FEIS. The reason for using 18" and 20" as minimum diameters (DBHs) for leave trees is explained in the EIS, Chapter 3, in the Snag analysis. The sizes are based on effective utilization by certain wildlife species.

**#130 Public Concern: The Flathead National Forest should establish connectivity corridors between leave trees.**

We suggest that small groups and large patches of "leave trees" be interconnected with each other and live forest to the greatest extent possible, rather than left as isolated islands.

**Response:** There will be a great deal of diversity across the landscape and within units following salvage harvesting, based on the diverse forest conditions left by the fire; the variability in species, size classes, density and

structures of the forest prior to the fire; and the resulting variability in deterioration/degree of unmerchantability of trees among the salvage units. This diversity is desirable, and interconnectivity between similar patches is expected to occur to some degree across this landscape. In addition, large areas of fire-affected forest will remain unsalvaged, as well as corridors along all riparian areas. Only 7% of the Moose Fire area on national forest system lands is proposed for salvage harvest.

**#131 Public Concern: The Final EIS should justify and clarify leave tree provisions.**

In alternative 2, 3 and 5, all Larch over 18" DBH is being left for Bird trees. In alternative 4, all larch and severely burned Douglas Fir over 18" DBH is being left. There are comments made concerning the lack of large snags in the area. There is no discussion of past timber sale requirements to fall all snags, of the large CCC crews that covered the 1929 fire area falling all of the snags, or of the 1000's of cords of firewood that have been made from snags in the past. Nor is there any discussion of the past timber sale requirement requiring all windfalls and un-merchantable material to be piled for burning during slash cleanup. There is no question of the need for snags and downed woody debris in a healthy forest. The question is how much or many is enough? What is your justification for leaving the Larch and Douglas-Fir trees? Will you be closing the entire burn area to firewood cutting to preserve the snags?

**Response:** Refer to the EIS, Chapter 3, Snags, where the value and reason for the larch and Douglas-fir snag prescriptions are explained, and the effects of each alternative discussed. These species are two of the most common and most valued (for wildlife use) large tree/snag species in this landscape. Snag management in past decades, which as you mentioned included the felling of all snags within units, and the piling and burning of all downed wood, was not necessarily the most beneficial to the soils or to wildlife. We continue to improve our knowledge and understanding of ecosystem processes and the value of the different elements of an ecosystem, including the dead wood both standing and down. The Moose Post-Fire project has incorporated into the prescriptions the best information available regarding the retention of snags and downed wood in the forest. Refer to the response to comment 116 regarding firewood cutting in the fire area.

**#132 Public Concern: The Final EIS should define the extent to which "feathering" will be mandated.**

Where in Appx A or the Design Features is it mandated that there will be a feathered transition between cut and uncut areas (DEIS 3-22)? To what degree will stands actually be "feathered"? . . . To what degree will there be a real "feathered" transition and to what degree will there be edge habitat in these units. (DEIS 3-22)?

**Response:** The prescriptions do not include feathering, and this term has been eliminated from the FEIS. Feathering is a concept that can be accomplished in some live timber stands. However, it is not achievable when nearly all the trees are dead, many are considered safety hazards, and all are expected to fall or blow over within a short period of time.

**#133 Public Concern: The Final EIS should consider more lenient leave tree guidelines for desirable species.**

We are pleased that all salvage units require that trees of all species uninjured by the fire would be left within the units (page 2-10). The Appendix B Post-fire mortality guidelines appear to allow a lot of judgment by the trained personnel that evaluate remaining live crown length and cambium damage to determine which "live" trees would be retained. Would it be appropriate to give more "benefit of the doubt" to tree species that may be more desired such as larch, Ponderosa pine, and white pine (i.e., retain more borderline live trees of the more desired species)? Is this within the authority of the personnel that use the mortality guidelines to determine leave trees?

**Response:** These comments were considered when updating the post-fire mortality guidelines. The post-fire mortality guidelines outlined in Appendix B do give more "benefit of the doubt" to species such as larch and ponderosa pine. All ponderosa pine would be left within all salvage units, whether live or dead, and this is clarified in the FEIS. At a minimum, all larch above 20 inches DBH would also be left in all units under all alternatives; this

drops to 18" DBH in most units and in 3 out of the 4 action alternatives. For a >14" DBH larch to be considered a leave tree, it need have only about 10% of its crown green and live. This is considered quite a conservative estimate, and it is more likely that these trees would die than live. Larch is considered an important species on this landscape. Douglas-fir is targeted for salvage, due to its high susceptibility to bark beetles, both now and over the next few years.

**#134 Public Concern: The Flathead National Forest should consider trees with any green foliage as live.**

The [Stevens and Finney] study also determined that the uppermost portion of the crown (which is the last to be burned) has far greater photosynthetic capacity than the lower portions of the crown, which means that trees can withstand very high levels of crown kill and still typically survive if the very top of the crown is not killed. In fact, some ponderosas with 100% crown scorch survived long-term. In light of this, you cannot mark any tree as "dead or dying" if it has any remaining green foliage; and you must prepare a new DEIS or a supplemental DEIS to analyze this new information. We are happy to provide a copy of the Stephens and Finney study upon request if you do not have one or are unable to locate a copy from the authors. We further note that the DEIS's statement, on p. 2-15, that severely burned trees can die later from bark beetle attack is highly misleading because most of that mortality will occur within one year of the fire, and most of the rest will occur by the second year. Thus, most of the trees that are going to die should have already died. In light of this, any trees that still retain green foliage at this point (a year after the fire) should be presumed to be live, not dead. Even though a minor percentage of these might still die next year, most will not.

**Response:** See response to Comments #84, #110 and #133, and specifically refer again to the final Post-fire Mortality Guidelines in Appendix B of the FEIS. Especially refer to and recognize the importance of distinguishing between the variable "crown scorch", as used by the researchers in the Stephens and Finney study you cite, and "crown kill", which is used in the Moose Post-fire mortality guidelines. Also note that our mortality guidelines are considered a conservative estimate of mortality for most species.

The statements on page 2-15 of the DEIS that you refer to are correct in their assessment of the mortality concerns associated with bark beetles in Douglas-fir, both that might occur in the year immediately after the fire and in subsequent years. Perhaps you are misinterpreting the statements, which simply relate the typical pattern of beetle attack that has been observed following a disturbance, such as fire. Beetles commonly attack trees most severely stressed (i.e. burned) first, followed in subsequent years with attacks on still living but also stressed or fire damaged trees. Douglas-fir beetle infestations in the Northern Rocky Mountains often last anywhere from 2-6 years, depending mostly on weather. Chapter 3 in the FEIS, under the section on Spruce and Douglas-fir bark beetles, expands on this considerably and provides supporting references. Further information and literature is contained in the Project Record.

**#135 Public Concern: The Flathead National Forest should consider leaving larch greater than 14 inches in diameter in the burn area.**

We strongly support the proposal to leave all larch >18" diameter, live or dead, on site, and recommend that you apply the standard to trees >14".

**Response:** The range of alternatives in the FEIS is considered adequate to address the concerns regarding retention of snags, the larger diameter snags in particular, as these are the ones that are of highest value and are most likely to be available for salvage. Refer also to response to Comment #133. In addition, there will be a tremendous amount of smaller diameter trees left both within the salvage units and across the entire landscape.

**#136 Public Concern: The Flathead National Forest should reduce the required number of large larch leave trees.**

I also think you need to reconsider leaving all Larch dead or alive >18" dbh. There are vast areas of this fire on USFS and Glacier NP that will never be logged, these will supply more than enough snags. The areas that do get logged should require no

more than 2 trees per acre >18" be left in the DF and WL. These are the trees that have the most value and will carry the timber sales.

Regarding the "Moose Post-Fire Project DEIS", the alternatives are inadequate from a harvester's standpoint. Alternative 1 is ridiculous. Alternatives 2-5 utilize a small percentage of the affected acres on top of that, why are you leaving the 18" and larger larch, when that has the highest market value. I can see leaving around 5 or less per acre as snags, but how many animals do you think are left to utilize them, and why is this not done on sales that aren't burned. Don't let these trees be wasted. The Doug Fir and Larch have a market value of the Alternatives 2 and 5 would be best for harvest value.

**Response:** See response to Comment #131.

**#137 Public Concern: The Flathead National Forest should not harvest larch in the burn area.**

(3-14) Forest Plan resource goals include designing treatments to encourage development of diverse vegetation native to the site. Larch was historically a dominant species in the south half of the fire area, and much of the original mature larch component was taken out with the harvest in the 1960's, 70's and 80's (Bollenbacher). If this is correct (and because of the fire) then none of the alternatives should look at harvesting any larch. The preferred Alt. 2 harvests larch smaller than 18". This is still pretty big material and should be reserved as OG recruitment or just left for seed source to reestablish historical conditions.

**Response:** See also response to Comments #131 and #133. The post-fire mortality guidelines (Appendix B in the FEIS) take a conservative approach in retention of larch in particular, leaving larch that could have less than 10% green crown. These trees are understandably quite stressed; many will probably die, but some might live. Because of the value of larch, as you recognize, we have chosen to leave trees with this level of damage. We have also chosen to leave at a minimum all 20" DBH and larger larch, live or dead, in all alternatives, in all salvage units. In many units and in 3 out of 4 of the action alternatives, this minimum DBH is dropped to 18".

**#138 Public Concern: The Flathead National Forest should offer stewardship contracts to facilitate salvage harvest in the burn area.**

We would also request that you modify Alternative 2 to include possible projects that would reduce fuel loading through service or stewardship contracts, where an operator could utilize the material for either conversion to forest products, such as lumber or paper, or for utilization in a biomass/cogeneration facility. These types of treatments and possibly some of those proposed in Alternative 2 are unlikely to be viable timber sales given the current market conditions and the level of deterioration. But many of these stands need treatment and treating them by prescribed fire will only be both costly and risky. Therefore we would ask that you consider the option of stewardship contracting (goods for services) so that additional stand treatments can be accomplished and the material treated can be utilized, while putting people to work.

**Response:** All feasible options for implementation would be considered at that stage of the project.

**#139 Public Concern: The Flathead National Forest should give separate consideration to various types of logging.**

Decision for 2002 winter tractor and skyline salvage operations should be separate from helicopter operations and should include provisions for exemption from stay during the 105 day administrative appeal process.

**Response:** Timber sales would be "packaged" to provide economical and operational offerings. The FEIS allows for variety in packaging timber sales to achieve these objectives.

**#140 Public Concern: The Flathead National Forest should reconsider its proposal for helicopter logging in the burn area.**

Don't go overboard on helicopter use. Only good green timber should be considered for that type of harvest. The state cannot get bids on chopper units they put up in this burn. As a retired Army Special Forces Officer with helicopter experience the prop

blast effect on dead trees and ashes would put the troops on the ground in danger. The economic factor should also be a big concern. I would encourage you to check what will pencil out to save time and labor with area mills.

Keep in mind the problems the state has had trying to sell Moose II due to the high percentage of helo-logging. I would recommend any helo-logging be optional removal. There's currently other logging systems out there capable of skidding long distances if that is one criteria used in specifying helicopter. We have successfully skid 4,000-5,000 feet in burnt timber, during the winter, at considerably less cost than helo-logging. Time is critical in getting this burnt timber on the market.

In order for a timber sale to be worthwhile it has to be profitable to the person or company doing the logging. By making it seventy percent helicopter only makes no sense to me at all. And by the way two to three thousand acres out of thirty-five thousand acres burned is a joke.

**Response:** There are many concerns and factors that were considered in the development of the proposed action and its alternatives, including the cost and safety concerns associated with helicopter logging. However, for a variety of reasons (sensitive soils, cost of required road reconstruction, watershed impacts, distance from roads being the major ones) helicopter logging was considered the only feasibly and acceptable logging method on many units. We recognize that there are economic and safety issues associated with this method. However, we have done what we can to mitigate the economic effects of helicopter logging, such as allow winter ground-based or helicopter where appropriate.

**#141 Public Concern: The Flathead National Forest should thin green timber adjacent to the burn area.**

Adjacent green timber is now showing a lot of frass in the DF, include an aggressive thinning program in these areas along with the fire salvage.

**Response:** Treatment in stands outside the fire area is not within the scope of this project.

**#142 Public Concern: The Flathead National Forest should not log in MA13A.**

No logging in MA13A, which is an unsuitable timber base.

**Response:** As stated in Chapter 2 of the EIS, under the alternative descriptions, timber harvest is permitted in MA 13A when winter range values can be maintained or improved. Proposed treatments in these units are designed for the sole purpose of addressing the Douglas-fir bark beetle concerns, and would remove only trees infested with beetles. Beetles may emerge from infested trees and attack the only remaining live Douglas-fir trees, which would reduce the scant thermal cover that remains on the winter range. Harvest would be very limited, and removal of beetle-infested trees would have little effect on winter range values.

**#143 Public Concern: The Final EIS should clarify management direction for logging in roadless areas.**

The language in the DEIS makes it sound like you are protecting inventoried roadless areas and unsuitable lands from logging under the proposed action when you are not. It appears that logging will be permitted in inventoried roadless areas and unsuitable lands except where "beetles are found to be present" (DEIS 1-7)? What you mean by "present?" This sounds like a zero tolerance policy for native species.

**Response:** Present means "existing". As the EIS states in several areas (Chapter 2 alternative discussions, Chapter 3 Roadless Area analysis, Appendix A unit tables), logging would be permitted in Inventoried Roadless Area units and units in MA 13A (winter range, unsuitable for timber management) to remove trees in which beetles exist at the present time, i.e. when salvage is occurring. As the EIS acknowledges in Spruce and Douglas-fir Bark Beetles section, Chapter 3, "Direct and Indirect Effects Common to all Action Alternatives", many acres within the fire area at risk to Douglas-fir beetle would remain untreated. We do not foolishly assume that our management actions would eliminate all beetles within the fire area, nor would we be so ignorant as to believe we could or would want to do so.

As the EIS states in Chapter 3, beetle activity is a normal and natural consequence of a fire event, with fluctuations in populations occurring periodically. However, high beetle populations conflict with some land management objectives, which is why actions that attempt to influence beetle populations are proposed. Refer to discussion under the Purpose and Need in Chapter 1 of the EIS. See the response to comment #72.

**#144 Public Concern: The Flathead National Forest should reevaluate the effectiveness of proposed harvest prescriptions in roadless areas.**

Modify the silvicultural prescriptions for harvest in roadless areas where the goal is to curb beetle infestation to ensure the action taken meets the objectives stated. Current proposed prescription for stands within the roadless areas has proven to be ineffective in meeting the objective of curbing mortality due to bark beetles. Montana SAF supports the intent of the proposed action within inventoried roadless area, however, failure to modify the prescription would result in activity that would not meet any of the stated purposes and need for action. The justification for entering roadless areas for timber harvest, even those designated as MA15 is questionable when the activity is not silviculturally sound and will not meet either the projects' or management area's objective.

**Response:** See response to Comment #159.

**#145 Public Concern: To control bark beetle infestation, the Flathead National Forest should increase harvest levels in roadless areas.**

Prescriptions for harvest in roadless areas where the goal is to reduce beetle infestation need to be modified to be effective and get the job done. Present proposed action will not be effective, more action and harvest is needed to be effective.

**Response:** See response to Comment #159.

**#146 Public Concern: The Flathead National Forest should justify the assertion that salvage logging will reduce bark beetle infestation, given that harvest will be delayed beyond 2003.**

If the logging won't be completed before beetles fly in 2003 then logging as the rationale to decrease bark beetle mortality for this timber sale is flawed.

**Response:** The EIS recognizes that once a disturbance and infestation of beetles has occurred, the most effective method to influence Douglas-fir beetle in the Moose Fire area is to remove beetle infested trees prior to emergence of the first generation of adults (FEIS Chapter 3, Spruce and Douglas-fir Bark Beetles, under "Direct and Indirect Effects Common to all Action Alternatives". It also recognizes that all units with Douglas-fir beetle may not be harvested before the spring of 2003, when the beetles emerge. This does not mean all is lost, and the FEIS in that same section outlines a plan to address that situation and provide for the greatest effectiveness in managing bark beetle populations that is possible, using an integrated approach of tree removal, pheromones and trap trees.

**#147 Public Concern: The Final EIS should reevaluate the level of threat presented by bark beetles.**

The FS dismisses the impacts from bark beetles on Glacier NP lands, stating that all of these acres are of relatively low hazard (DEIS 3-59). So why is there a need for the FS to log any lands with similar hazards on NFS lands? . . . The vast majority of stands within five miles of the fire have only a medium risk (DEIS 3-35). The risk of spruce beetles is overstated. Douglas fir beetle risk may be overstated as well because, historically, Douglas firs have never been a large component of the forests here (DEIS 3-38). See also DEIS 3-62 regarding the low potential for bark beetle outbreaks. Douglas fir beetle risk in most stands in the fire area is low to very low. Only a minor portion of the stands have a risk rating higher than moderate (DEIS 3-39). Risks are likewise relatively low over most of the stands within five miles of the fire (DEIS 3-41&49). Bark beetle infestations in the region only averaged 1.5 trees killed per acre last year (DEIS 3-44). The risk of Douglas fir beetles is again overstated.

The planners of this salvage have stated that the probability of widespread epidemic conditions developing from the Moose fire is very low "mainly due to the fragmented nature and level of susceptibility of stands vulnerable to bark beetles in this area continuing for several years into the future." They add that the current high Douglas-fir beetle populations in northwestern Montana are "likely to continue" for at least 2-3 more years, while spruce beetles are at endemic levels "not in excessively high numbers." These and similar other statements in the DEIS indicate that the Moose post-fire conditions are not such as to call for drastic preemptive strike measures.

The DEIS maps displaying the 5 mile radius in which we may expect a beetle outbreak, clearly shows that the vast majority of beetles, employing prevailing winds, would likely move E-NE into Glacier National Park where they would be considered part of the natural process. With the exception of a few relatively small parcels along the North Fork Road, very little private property is likely to be impacted, and none of these private lands show even a "low" risk from beetles.

**Response:** The Spruce and Douglas-fir Bark Beetles analysis in the FEIS is complete and clear in its assessment of the situation and the potential risk of beetle epidemic conditions. It rests on a set of assumptions outlined in detail in Chapter 3, Environmental Consequences. These assumptions are not baseless opinions, but rest on full knowledge of current conditions in the area (as discussed fully under the "Affected Environment" section); years of experience and knowledge and research of entomologists; experiences from the recent fires in this region; and the understanding that we have of bark beetles and their habits. As stated in the FEIS, the assumptions used to assess the risk and consequences of a beetle epidemic in the Moose Fire area reflect a condition that was assumed would be highly favorable to bark beetle development. This allows the decision maker to make a fully informed decision, integrating the effects of what might be an extensive beetle epidemic with other multiple considerations and resource values. It was made clear in the DEIS that monitoring of beetle populations would occur in the summer of 2002, to verify the true extent and potential effects of beetle populations, and the analysis updated to reflect the results. Monitoring has taken place, and the FEIS contains updated information. While wet cool spring weather reduced potential Douglas-fir bark beetle infestation expansion, newly infested trees were found in every stand surveyed. Prior to the fire, there were less than 500 acres in the Big Creek drainage with Douglas-fir bark beetle activity. Based upon monitoring in the summer of 2002, we estimate there are not 7000 acres with active bark beetle activity. Given weather conditions favorable to beetle survival, the potential exists for beetle populations to continue to increase and expand outside the fire area. Resource values at risk are described in the FEIS and project record.

**#148 Public Concern: The Final EIS should clarify the source and meaning of beetle-risk estimates.**

Please explain what you mean by "high risk," "moderate risk," "low risk," and "susceptible" in a quantitative, probability based format (DEIS 1-7). How were these indices derived? Have they been tested?

**Response:** The Spruce and Douglas-fir Bark Beetles section of the project record provides detailed documentation explaining the process by which beetle risk was determined and how risk determinations were made.

**#149 Public Concern: The Final EIS should justify the assumption that bark beetles will leave the burn area and infest other trees.**

What is the basis for the assumption that beetles "produced in the fire area" would fly out of the area and attack other areas (DEIS 3-29)? On DEIS 3-30, the FS states that bark beetle attacks following fires "are not a foregone conclusion." The FS inappropriately uses scare tactics with little science behind them—all regarding a native species with an important ecological role. What is the point of logging trees simply because they are capable of attracting and supporting bark beetles (DEIS 3-30)? There are millions of trees in the forest capable of attracting bark beetles. Since the Moose Fire occurred in late summer and early fall, the trees' inner bark may have become to dry or sour and may not be good habitat for bark beetles (DEIS 3-30).

**Response:** See also Response to Comment #147. Assumptions for the beetle analysis were clearly outlined in the DEIS and are reiterated in the FEIS. Supporting information is contained in the project record. There is acknowledgement that the analysis is a risk assessment and that widespread beetle epidemic conditions are not a certainty, yet they must be recognized as a possibility. Two of three conditions needed for an expanding Douglas-fir

bark beetle infestation are present in and around the Moose Fire area – beetle populations and susceptible trees. The remaining factor is weather. Should the mild winters and warm dry springs and summers of recent years continue, there is a substantial risk that existing beetle populations will expand, causing mortality to Douglas-fir trees within and outside the fire area. Refer to the FEIS and Project File for further detail.

**#150 Public Concern: The Flathead National Forest should clarify whether bark beetle infestations in Glacier National Park might compromise the effectiveness of treatments on adjacent National Forest land.**

Thank you for including the Chapter 3 discussions of spruce beetle and Douglas-fir beetle life history and host interactions (beginning on page 3-31). It is stated that 290 acres of spruce tree habitat that burned during the Moose fire within Glacier National Park are stated to have medium or high risk of spruce beetle infestation (page 3-34), yet we do not see the locations of these medium to high spruce beetle risk areas shown on Map 3-3 (page 3-37). Since logging for bark beetle treatment is not proposed in Glacier Park to remove beetle infested trees, will spruce or Douglas fir beetles from infested trees in Glacier Park potentially infest trees on National Forest land, and thus, reduce potential effectiveness of proposed beetle treatments on National Forest land?

**Response:** Map 3-3 (and 3-4) are in error – they do not show the correct polygons for beetle risk in Glacier National Park. Thank you for bringing this to our attention. They have been corrected in the FEIS.

The effects from potential beetle activities on Glacier Park lands have been described under the Cumulative Effects section of Chapter 3 Spruce and Douglas-fir Bark Beetles analysis. It is acknowledged that beetle activity and spread from Park lands could result in infestation and mortality of trees on national forest lands. Though actions proposed in the Moose Fire project would have little direct effect on the beetle activity in Glacier National Park (except perhaps by removing some of the potential food base of the Douglas-fir beetle, by salvaging of beetle-susceptible trees) the beetle activity in the Park could result in some reduction in the effectiveness of national forest actions. While any reduction in effectiveness cannot be quantified, one thing is clear. The more susceptible trees are removed before they are infested, and the more infested trees are removed before beetles emerge, the lower the potential beetle population. This is well supported in the literature and by professional entomologists. Refer to the project record for further detail.

**#151 Public Concern: The Flathead National Forest should consider that salvage logging in the Moose Fire area might exacerbate bark beetle infestation.**

Salvage logging these roadless areas or in fact any part of the Moose area is more likely to encourage epidemics of bark beetles than to suppress or eradicate them. Evelyn Bull and Torolf Torgerson, as well as other Forest Service research station scientists have exhaustively documented the importance of large snags and large downed wood for a group of cavity excavating and nesting birds and insectivorous ants, predatory beetles and other insects that prey on insects such as bark beetles. They are an important factor in keeping these insect populations at relatively low endemic levels. Even though this project would salvage in about ten percent of the total fire area, including unburned parts, logging the larger dead dying trees would act significantly to deprive the forest of much of its ability to "manage" these insect pests.

**Response:** The importance of large standing and downed wood is clearly recognized (refer to Snag section of EIS), and prescriptions and alternatives have been designed around this issue. Even under the alternative with the highest acres of salvage, a large portion (about 67%) of the moderate and high quality snag habitat (containing the highest numbers of larger diameter snags) will remain untreated, providing high quality habitat for the birds and insects you mention. Woodpeckers can be important predators of spruce beetles (Schmid and Frye 1977), but do not appear to play as important a role in affecting Douglas-fir beetle populations. This may reflect the thicker bark characteristics found in Douglas-fir when compared to spruce or lodgepole pine for example (project record J-34).

**#152 Public Concern: The Final EIS should describe the importance of proposed bark beetle treatments, and what methods are available for treating beetles at this time.**

We also believe that it would be helpful if the FEIS more clearly stated for public understanding that removal of infected and potential brood trees and trap trees are the only known ways to treat spruce beetle at the present time, and that proposed treatments are necessary to avoid epidemic spruce beetle conditions.

**Response:** The bark beetle sections of the FEIS have been updated.

**#153 Public Concern: The Flathead National Forest should monitor to confirm that bark beetles pose a threat prior to implementing any management action to control them.**

Also have the spruce or Douglas-fir beetle epidemic risks been confirmed following the Moose fire? We believe there should be ongoing beetle monitoring to confirm beetle presence and tree mortality and the risk of beetle epidemics before all beetle treatments are finalized.

**Response:** Beetle monitoring for 2002 has been completed and results incorporated into the FEIS. Monitoring will continue in future years for as long as deemed necessary.

**#154 Public Concern: The Final EIS should evaluate bark beetle infestation as a normal natural disturbance.**

As you know this area and adjacent forests saw large fires in 1910, 1926, and 1929. If the scenario of a catastrophic beetle epidemic were a given, one would expect few large trees to have survived to the present day. Yet, we see that this was not the case, and these large trees are now suggested to be at risk from beetles and in need of logging. While we have no doubt that there will be a natural increase in insect populations after this natural fire, the scare tactics employed in the DEIS can only serve to damage the Forest's credibility. The Forest Service should stop trying to frame purely natural events as catastrophes from which USFS must save people.

The FS has asserted that "the Moose Fire created a situation that is very favorable for the development of spruce fir and Douglas fir beetle epidemic conditions" (SN 5). And "the Moose Fire created a situation that is very favorable for the development of large populations of spruce fir and Douglas fir bark beetles" (DEIS I-6). The FS needs to provide a scientific justification for its determinations of the degree of mortality that will result from insect infestations. These trees "could" just as easily be killed by the beetles or they "could" survive (or avoid an attack altogether). And even if they were attacked by the beetles, such an attack might be considered a natural (and even a beneficial) occurrence. The likelihood and benefits of natural disturbance should be clearly laid out in the NEPA analysis. The scare-mongering in the DEIS should be replaced by sound ecological science that recognizes the long history of these bark beetles in our forests and the beneficial roles that they play. . . . The DEIS states that there is a need to decrease mortality caused by bark beetles (DEIS S-2). There have been bark beetle occurrences in this area before. For example, there were spruce beetle occurrences here in the 1950s (DEIS 3-32). . . . The natural recovery of forest stands from replacement by other tree species is ignored; it is assumed that no trees will grow to maturity on diseased sites without Forest Service intervention. Mortality caused by diseases and insects are periodic and not steadily increasing, as the DEIS implies. Endemic diseases are cyclic but rarely do they spread. Many symptomatic trees live for decades or even reach old age. Inventory forms used by stand examiners lack any way to measure recovery from disease processes, and cannot indicate an interaction between more than one disease/insect interaction. In short, we have no confidence in the quality of the data you have which indicates to you that there is a "forest health" "problem" that needs "logging" treatment.

**Response:** See responses to similar comments #147, #149, #155 and #156. The FEIS acknowledges that epidemic infestation levels of bark beetles are not a foregone conclusion. It is largely a matter of risk management. Like large stand-replacing wildfires, wide-spread bark beetle infestations are naturally occurring events that have been taking place for thousands of years. If the Moose Fire area were surrounded by hundreds of thousands of acres of wilderness or other lands with similar management objectives, allowing the bark beetle infestation to run its course would be appropriate. However, this is not the case in the Moose Fire area. Because of the severity of the Moose Fire and relative lack of live trees within the fire perimeter, the live trees that remain are valuable from an ecological perspective. These fire-weakened trees are at risk from expanding spruce and Douglas-fir bark beetle infestation. There are extensive areas of state forest near the Moose Fire area. These lands are managed to financially support schools, and contain many acres of trees that are susceptible to bark beetles. The Montana Department of Natural Resources and Conservation has expressed concern that bark beetles populations in the

Moose Fire area may expand onto state forests, and asking that the Forest Service take prompt actions to reduce this risk. There are also thousands of acres of corporate timberlands near the Moose Fire area. Like state lands, these corporations are concerned about expanding beetle populations impacting trees on their property and have asked the Forest Service to take prompt actions. There are literally thousands of individual homesites within 10 miles of the Moose Fire area, many in the wildland/urban interface, that contain trees that are susceptible to bark beetle attack. Also located near the Moose Fire area, the Big Mountain Ski and Summer Resort contains many acres of susceptible trees. If high levels of mortality were to occur here, it could have significant safety, economic and social impacts on the resort and local community. Lastly, the primary municipal watershed for the community of Whitefish and the secondary municipal watershed for the community of Columbia Falls are located within 10 miles of the Moose Fire area. These watersheds also contain many acres of susceptible trees. While a large-scale bark beetle infestation may be a natural event, the effects of increased mortality in large Douglas-fir and spruce trees are not desirable on the lands within or surrounding the Moose Fire area. Refer to Project Record material for more specific information on resource values at risk.

**#155 Public Concern: The Final EIS should acknowledge that bark beetle infestation might be a necessary part of the regeneration process.**

Bark beetles are natives of the ecosystem and local endemic populations of beetles are a normal component of the ecosystem and that all trees are susceptible to attack and mortality due to bark beetles, and that this interaction is a normal ecosystem function, and it is our understanding that even large populations of bark beetles and resulting tree mortality can be part of normal ecosystem function. We recognize that much of the public perceives epidemic beetle populations as an unhealthy forest environment. However, beetle populations generally experience "boom and bust" cycles, and forests have proven resilient, if not dependent on these cycles. While from the perspective of a forest manager, burned trees are highly at risk for a beetle epidemic, this may also be part of a natural progression to a new successional sere. In this manner, a beetle infestation may be part of the fire disturbance and regeneration agent in the ecosystem. Many forests that have undergone "devastating" infestations are now experiencing regeneration without active management before or prior to the epidemic.

**Response:** We too acknowledge that bark beetles are natives and their actions perfectly normal and expected in this ecosystem, and after this fire. We don't expect to be able to eradicate them, simply reduce their potential effects in this area because of the possible undesirable impacts to other values, which must be considered in light of our multiple land management objectives and proximity to private and state lands. In the case of the Moose Fire area, it is overwhelmingly the fire and the conditions it created that is initiating and influencing the regeneration of a new forest. Bark beetles in this situation are also reacting to the newly created forest conditions and increased food base. As you stated, they too are part of the fire disturbance and natural progression to a new forest condition. The main way beetles are probably influencing forest regeneration in this area is by potentially reducing the live tree component within the fire area even more than that caused by the fire, killing trees that might provide seed for current and future regeneration. This effect is recognized in the EIS in Chapter 3, under the discussion of effects for Alternative 1, Spruce and Douglas-fir Bark Beetles. See also the response to comment #154.

**#156 Public Concern: The Final EIS should analyze the positive ecosystem role of bark beetles.**

The FS needs to discuss the natural fluctuation of insect populations over time in response to a spectrum of forest conditions. The FS should address the essential role that insects play in forest nutrient cycling and renewal. Emphasizing individual tree health subverts the goal of ecosystem management integrity and long-term sustainability of forests and their myriad biotic components. In the Northern Rocky Mountains, tree decay, native insects, and fire are integral components of a healthy forest. Decaying and dead trees are essential components of a healthy forest (McClelland and McClelland 1999). Further, pathogens help decompose and release elements sequestered within trees, facilitate succession, and maintain genetic, species and age diversity. Intensive control measures, such as thinning, salvage, selective logging, and buffer clearcuts around affected trees remove crucial structural features. Such activities also remove commercially valuable, disease-resistant trees, thereby contributing to reduced genetic vigor of populations (Castelb et al. 1995). The FS should adequately substantiate that the very insects and pathogens these forests evolved with are now a serious threat to overall forest health. The best science and recent Douglas fir beetle research are clear in their determination that not only is the current beetle outbreak on the decline and within historical norms, these insects and pathogens are an integral part of overall ecosystem health. The FS should assess the magnitude of current insect infestations as well as anticipated mortality from these infestations.

**Response:** See Responses to the comments #147, #149, #154 and #155. The EIS does not say or does not imply that beetles are a “serious threat to overall forest health”, and in fact fully acknowledges the “normal and natural” role these insects play. We do not imply that we would be able to or would even want to eliminate insect population fluctuations and effects in all areas at all times. We state that we desire to reduce the risk of potentially high beetle populations in this area, because of concerns with potential undesirable effects on other resource values, which may conflict with the Forest Plan objectives that guide management of National Forest lands within Moose Fire, and with landowner objectives on nearby state and private lands. Refer to Chapter 1 of the FEIS for the purpose for this project, and to Section VI of that chapter for a description of the relationship of this project to the Forest Plan.

**#157 Public Concern: The Final EIS should disclose any potential bark beetle risks associated with leaving unmerchantable material in the burned area.**

Are there bark beetle insect infestation risks associated with the proposal to leave unmerchantable material (whole trees and tops/branches) standing or fallen in the units where they are not burned for fuel reduction (page 2-9)?

As stated in the Design Features, slash would be left in most of the units. Could this slash contribute to bark beetle outbreaks if piled in large amounts?

**Response:** Unmerchantable material does not provide habitat for the beetles of concern and so does not pose any concerns for Douglas-fir or spruce bark beetle population buildup. Refer to EIS, Chapter 3, Spruce and Douglas-fir Bark Beetles section.

**#158 Public Concern: The Flathead National Forest should reexamine the effectiveness and potential resource impacts of various treatments to control bark beetles.**

Pheromone treatments are planned in some areas where there are few live trees that might serve as natural host trees (DEIS 3-54). Could the FS be creating a problem in areas where it does not exist? Could the FS be contributing to the spread of bark beetles through any treatments? The DEIS states that the effectiveness of Douglas fir beetle salvage logging is dependent on the proportion of the tree that is removed from the site (DEIS 3-55). How much of the trees will be removed from the site? What are the impacts of such removal to soils, watersheds, and other resources? What is the potential for beetles to remain on the stump or slash after logging and continue to spread?

**Response:** Refer to the analysis for Spruce and Douglas-fir Bark Beetles in Chapter 3 of the FEIS. A problem already exists – there are currently 7000 acres with active bark beetle activity within the Moose Fire perimeter (Project File Exhibit 0-1 Heidi). The spruce beetle pheromone trap treatments would not contribute to the spread of bark beetles, and in fact are expected to capture many of the emerging beetles, preventing them from spreading to other areas. A combination of pheromone treatment and removal of infested trees proved successful in containing a spruce beetle infestation following the Little Wolf Fire on the Tally Lake Ranger District of the Flathead National Forest (Gibson *et al.* 1999). The FEIS states that the effectiveness of the salvage actions on Douglas-fir bark beetles is directly proportional to the amount (meaning the number, the proportion) of infested trees that are removed from the site – not on “the proportion of the tree” that is removed from the site. The impacts of salvage on all resources of concern are disclosed in Chapter 3 of the FEIS.

**#159 Public Concern: The Flathead National Forest should log to control bark beetles.**

The need to decrease potential mortality caused by bark beetles to remaining live trees inside and outside the burn area was explained in a common sense approach in the document, but then not accepted in the proposed action. We do not feel the use of beetle traps and other control methods are as effective as logging of infected trees would be. If anything, it should be a combination of methods as outlined in the DEIS.

Both the Douglas Fir and spruce trees killed or weakened in the fire provide a perfect place for beetles to live and breed. This salvage project would remove the infested trees and those trees at risk before beetle populations can expand and infest other trees outside the burned areas and spread to adjacent private lands.

There is a real concern that the Forest Service is not salvaging enough of the Douglas fir and spruce trees that are susceptible to bark beetle infestation. The Douglas fir and spruce beetle infestations that resulted from the Little Wolf fire are an example of a far too conservative effort to salvage timber susceptible to bark beetle infestation. No one wants to see these epidemic levels of bark beetle infestations spreading to green trees within the fire perimeter and even spreading to green trees on other ownerships outside the fire perimeter. The Forest Service must be very aggressive in harvesting both the Douglas fir and spruce that are fire-killed or weakened by the fire because these trees provide a perfect environment for the beetles to live and breed. Also the Forest Service must not allow the political boundaries of roadless lands to prevent salvage of timber that could contribute to a bark beetle infestation.

**Response:** The proposed action addresses the issue of management of potential epidemic beetle populations at a high level, proposing salvage of most stands across the fire area that are believed to be at highest risk to beetles (including those within Roadless Areas), along with many others at moderate or low risk. In most stands, the more severely fire damaged Douglas-fir trees (those most susceptible to current and future beetle infestation) would be removed, along with the dead and beetle infested trees. In stands within Roadless Areas or in areas that the Forest Plan designates as unsuitable for timber management, only trees actually infested with beetles would be removed. It is true that this more limited tree removal lessens the effectiveness of the treatment for reducing beetle populations. However, there are other issues and values associated with these lands that must be weighed against the beetle concerns. As with all projects, there must be an acceptable balance reached between what are often conflicting management objectives, with tradeoffs understood and accepted. We feel the proposed activities, as a whole, would in fact have substantial influence on potential beetle populations, though we certainly don't expect to be able to prevent all future tree mortality due to beetles.

**#160 Public Concern: The Final EIS should address the effectiveness of logging to reduce threats from bark beetles.**

Has logging actually ever been successful at decreasing bark beetle occurrences here? Was logging too late? Too early? Did logging cut more trees than would have died from bark beetle attacks? Or less? Or has this been (will this be) investigated? What (is) the primary goal-preventing bark beetle occurrences or extracting timber? What role were (are) the treatments most effective at? Is salvage logging ever successful at eliminating all bark beetle occurrences? Can it ever be? (We doubt it.) How much are we talking about? How is this not merely the logging of big trees under the guise of forest health? . . . The DEIS assumes that the bark beetle treatments will be effective in the purpose and need. But on page DEIS 3-31, it admits that "predicting bark beetle infestations is not an exact science." Might the bark beetle logging be ineffective?

**Response:** Refer again to the effects analysis in the EIS, Chapter 3, Spruce and Douglas-fir Bark Beetles, where the effectiveness of salvage harvest and other beetle treatments are disclosed. As is stated at the beginning of that section, in the Introduction to the Affected Environment, the greatest benefits in dealing with actual or potential beetle infestations are derived from efforts aimed at preventing outbreaks rather than suppressing them. Once a disturbance (such as fire or blowdown) has occurred, removal of susceptible trees before beetles have an opportunity to infest them is the most effective course of action to influence beetle populations. If beetles have infested trees across an area, then the next most effective action would be to remove as many infested trees as feasible. Alternatives also include use of non-harvest methods, such as pheromone-baited traps. Refer also to response to Comment #146, #147, #155 and #156.

**#161 Public Concern: The Flathead National Forest should consider alternatives to logging to control bark beetles.**

If such flexibility is allowed, why can't the FS use less logging and use other methods (such as pheromone methods) if these methods prove successful? Why can't the FS develop alternatives that emphasize these other methods instead of logging?

**Response:** See EIS, Chapter 2, description under Alternative 6 in section "Alternatives Considered But Not Given Detailed Study". This helps explain why the particular mix of beetle management methods were chosen. It should also be remembered that beetles are not the only reason for the proposal to salvage trees. Recovering merchantable wood fiber is also a major purpose, as described in Chapter 1.

**#162 Public Concern: The Flathead National Forest should consider controlling beetles with pheromones instead of logging.**

If pheromone methods allow for a "more effective, focused salvage effort," (DEIS 1-8) then why couldn't these be used in a limited way as an alternative to all salvage logging?

**Response:** Refer to response to Comment #161. It is clearly stated in the DEIS and FEIS that pheromone treatments are included in all action alternatives.

**#163 Public Concern: The Final EIS should clarify the procedure for pheromone treatments in the project area.**

The FS states that the timing of various activities related to pheromone treatments is of great importance (DEIS 3- 52 and 53). What resources and personnel are dedicated to these tasks? Is funding assured? What is the potential for something to go wrong? Could any of the pheromone treatments actually lead to serious outbreaks of bark beetles and, indirectly, increased logging? How will the FS ensure that tasks are performed in a timely manner?

**Response:** If a decision to adopt one of the action alternatives on the Moose Post-fire project is made, and continuing monitoring of beetle populations indicate the need, then more detailed work plans to accomplish the treatments would be prepared. Funding needs would be a part of this plan, and requests would be made on a yearly basis. Treatments related to insect and disease control are usually given relatively high priority, and recent experience has indicated that we expect to receive adequate funding and resources to accomplish necessary treatments.

**#164 Public Concern: The Flathead National Forest should take aggressive management action to prevent the spread of bark beetles to areas adjacent to the burn.**

In pages 3-29 through 3-65 there is discussion regarding the Spruce and Douglas-Fir bark beetle populations, current and potential. This discussion is good, however I do not feel there is real recognition of the magnitude of destruction that these beetle populations will cause. Personal experience over the past 37 years with the harvesting of 250 million Board Feet plus of Federal and State timber in the Big Creek, Canyon Creek, Coal Creek, Hay Creek and several other areas has shown that the only control is to harvest infected and potentially infected trees as soon as possible. Beetle populations only subside when they have eaten themselves out of house and home or we have a very, very cold winter with low snow depths. The green timber stands surrounding the Moose Fire Area are where the real threat and destruction will occur. The present EIS only addresses the fire area. When the beetles move to these adjacent stands, you will not have 2 plus years to prepare the environmental documents to do the necessary harvesting, How will you react to this crises? How will you protect private property? Destruction of forest stands by beetles is just as destructive to the area as a forest fire. Why do you not react with the same urgency and include this treatment in your current document?

Recent events on the Tally Lake Ranger District—Little Wolf Fire, 1994—have catalyzed an outbreak of Douglas fir beetles that are affecting a wide area. Douglas fir beetles were not aggressively pursued during the Little Wolf Fire salvage efforts. The spruce beetle issue was aggressively pursued during the Little Wolf Fire salvage efforts and the potential epidemic effects minimized. How soon we forget! We would do well to read and understand the excellent analysis of both the spruce and Douglas fir beetle potential presented in the DEIS. According to this compelling analysis, you must implement aggressive action to capture the emerging population of these insects. To fail will put many areas at risk, including private lands adjacent to the Moose Fire area (DEIS Page 3-63). The FEIS must address these significant issues and promote the necessary actions to implement the Purpose and Need of the project.

**Response:** See also response to Comment #159. The FEIS addresses potential effects to stands both within and outside the Moose Fire area should epidemic beetle populations occur (Chapter 3, Spruce and Douglas-fir Bark Beetles section, particularly under Cumulative effects section). Experiences after the Little Wolf Fire were reviewed

and incorporated into our assessment of what might happen in the Moose Fire area. However each fire must ultimately be evaluated in light of its own unique conditions, both within and surrounding the fire area.

**#165 Public Concern: The Flathead National Forest should remove all trees at potential risk for bark beetle infestation.**

A bug is no better than a blaze, and is often its forerunner. It is important to me that you get potential and actually infested trees out of the forest. If the USFS motto had been a green back buck is preferable to a black backed bug the forest would be better today. Clean up the whole forest not just this area. I use to enjoy taking visitors around the forest, now it looks like a slum full of unoccupied buildings.

Modify the silvicultural prescriptions for harvest in roadless areas where the goal is to curb beetle infestation to ensure the action taken meets the objectives stated. Current proposed prescription for stands within the roadless areas has proven to be ineffective in meeting the objective of curbing mortality due to bark beetles. Local experience on both public and private timberlands has shown that it is impossible to effectively treat beetle infested stands by only removing the infested trees. To be effective, other suitable host trees within the project area also need to be removed, this is especially important in a situation such as this where multiple entries over time is not feasible. The USFS clearly recognizes this and it is reflected in its other treatment prescriptions for areas outside of the roadless area. In order to successfully treat a stand and have the resulting stand exhibit a resistance to beetle infestation, it is necessary to remove not only the infected trees, but also the other susceptible host trees in the infected area.

**Response:** See response to Comment #159.

**#166 Public Concern: The Final EIS should explain the bark beetle rating system.**

Bark beetle rating systems arbitrarily target larger trees, older trees, trees in highly productive sites, and sites with high basal area densities (for example, DEIS 3-32 and 39). What is the basis for these rating systems? What is the role of bark beetles as a healthy natural disturbance event in precisely these kinds of areas?

**Response:** See response to Comment #147 and #148.

**#167 Public Concern: The Flathead National Forest should describe how trees susceptible to bark beetle infestation will be identified and should ensure that a forest ecologist makes those decisions.**

The SN claims that, if the techniques in the proposed action are approved, the FS would be logging "beetle-susceptible large diameter Engelmann spruce and Douglas fir trees . . . that provide brood habitat for the spruce beetle and Douglas-fir beetle" (SN-7. See also DEIS I-7). The FS should describe how such "susceptible" trees would be identified for logging and differentiated from any tree in the forest. Given the potential for trees to survive insect attack that we outline below, it is nearly impossible to predict tree mortality. Green trees (including trees that are "dying" or vulnerable to attack) should thus be precluded from harvest. If delineation of dying trees is slated to occur, a forest ecologist with extensive experience with insect related tree mortality should make the delineation.

**Response:** The post-fire mortality guidelines outlined in Appendix B of the FEIS incorporates criteria that render a tree susceptible to beetle infestation, based primarily on type and degree of fire damage and tree size. The guidelines are based upon the best available knowledge and research, and the site-specific conditions in and around the Moose Fire area. Though it is true that no one can predict with absolute certainty which trees will be infested by beetles or which trees will die from the effects of a fire, intelligent and informed determinations can be made by trained and experienced people by observing external indicators such as those described in the guidelines.

**#168 Public Concern: The Final EIS should analyze potential beetle infestation impacts from not logging in riparian areas.**

Failure to plan to meet Need #1—decrease potential mortality caused by bark beetles. . . . Please include a risk assessment and rationalization for this decision not to salvage in riparian areas in the FEIS and illustrate the cumulative effects that can be expected if the engineered beetle trap strategy fails.

**Response:** The DEIS and FEIS explain in Chapter 1, “IV. Purpose and Need and the Proposed Action” why logging in the riparian areas was dropped from consideration. The DEIS and FEIS, Chapter 3, Spruce and Douglas-fir Bark Beetles, under Direct and Indirect Effects Common to All Action Alternatives, describes the pheromone based funnel trap method that will be employed to manage spruce beetles in the riparian areas, and its expected effectiveness. Based on past experience of entomologists, this method is expected to be quite effective under the situation we might have in the Moose Fire area, for reasons outlined in the EIS Chapter 3. If this treatment does fail, Alternative 1, the No Action alternative, would illustrate the effects that might be expected. These options provide the Responsible Official with information from which a reasoned choice can be made.

**#169 Public Concern: The Final EIS should address how management actions will be modified if threatened and endangered plant species are discovered.**

How will activities be modified if TES plants are discovered (DEIS 2-9)? Will these steps protect the plant populations of concern? How?

**Response:** Two populations of one sensitive species (pale corydalis) were found within areas scheduled for activity during field surveys that were conducted in June and July of 2002. In order to avoid impacts to the population located in Unit 16, we determined that to completely exclude harvest activity in the area where plants were found was appropriate to protect these populations. The second population in Unit 4 would be adequately protected by requiring winter logging (where ground disturbance, which might negatively affect the plants, would be greatly minimized) or no logging, depending on the alternative chosen. Full analyses of mitigating circumstances are found in the FEIS.

**#170 Public Concern: The Flathead National Forest should consider threatened and endangered species on various lists when making management decisions for the burn area.**

All species on natural heritage rare species lists, FNF MIS lists, USF&WS T&E species lists, and R-I Sensitive species lists should be considered.

**Response:** All plant species on the above mentioned lists were considered in this analysis, even though we are only required to address threatened, endangered, and sensitive species. Refer to Chapter 3 of the FEIS for details.

**#171 Public Concern: The Flathead National Forest should expand its noxious weed cumulative impacts analysis.**

Cumulative effects analysis for invasive species does not clearly disclose the impacts of motorized use, access routes, grazing (if any), mining, ROWs, and other activities/events (DEIS 3-78 and 79). Only 60% of the disturbance in the project area is the result of the Moose Fire (DEIS 3-79). This means that 40% comes from other sources. Please explain what those other sources are and explain how the action alternatives would exacerbate the situation.

**Response:** The effect of motorized use was discussed on page 3-78 of the DEIS and is reiterated in the FEIS. There has not been, nor are there any plans for grazing or mining in the project area. All other activities that may effect the spread of invasive species are addressed in the DEIS (3-78 to 3-79) and FEIS. The commenter misinterpreted the DEIS, in that 60% of the burn area is considered disturbed for weed risk assessment purposes, meaning that 40% is considered not disturbed. There is discussion in the DEIS and FEIS on how the proposed activities may exacerbate the weed situation (DEIS 3-75 to 3-82; and FEIS).

**#172 Public Concern: The Final EIS should describe weed impacts and management direction for the burn area.**

What kind of activities will be occurring related to noxious weed control and how will they affect watersheds, soils, wildlife, native plants, recreation and other resources (DEIS 1-3)?

**Response:** Noxious weed prevention and control are ongoing activities that are authorized under a previous NEPA decision. Actions to treat weeds and prevent weed spread have been occurring, and will continue to occur throughout the project area. The effects of these actions on the environment have been fully analyzed in the Flathead National Forest Noxious and Invasive Weed Control EA (2001).

**#173 Public Concern: The Flathead National Forest should prevent the spread of noxious weeds in the burn area.**

Why wasn't an action alternative developed that doesn't increase invasive plant risk more than the no action alternative (DEIS S-15). Why weren't sufficiently effective prevention strategies for invasive plants considered? . . . The no action alternative addresses invasive species better than any of the action alternatives (DEIS 3-75). The FS should strongly consider the alternative that addresses invasive species impacts best, and should augment the current no logging alternative (no action alternative) with road decommissioning similar to that in alternative 4, or stronger.

**Response:** As mentioned, the No Action alternative addresses invasive species. An action alternative that contains no harvest and includes road decommissioning (as suggested) would still risk increased spread of invasive and noxious plants, since mechanized equipment is required to implement road reclamation actions. The rationale for not considering in detail a “no harvest” action alternative is addressed in Chapter 2 of the FEIS. Also refer to the response to comment 25. Please note that noxious weed control and prevention are ongoing and foreseeable activities in the project area that are described and authorized under a previous NEPA decision (see response to comment #172). In addition, design criteria developed to reduce spread of weeds are mentioned in Chapter 2 of the DEIS and FEIS.

**#174 Public Concern: If chemical weed control measures are implemented in the burn area, the Flathead National Forest should mitigate any potential negative impacts to wetlands and aquatic areas.**

EPA fully supports control of noxious weed infestation. While burning and other ground disturbance (such as logging) can simulate or promote weed problems, we note that burning followed by herbicide use can bring effective weed control. We also note that if weed control chemicals are used they can be toxic and have the potential to be transported to surface or ground water following application. It is important that if herbicides are used, the water following concerns of herbicide usage be fully evaluated and mitigated. Herbicides used in the project area should be used in a safe manner to ensure protection of surface water ecological integrity, and maintain public health and safety, and no spraying should occur in wetlands or other aquatic areas.

**Response:** The effects of weed treatment actions, including the use of selected herbicides on the environment, have been fully analyzed in the Flathead National Forest Noxious and Invasive Weed Control EA (2001). In summary, herbicide use near water, wetlands, or riparian areas will not occur, unless the herbicide used is Glyphosate, which is approved by the EPA for such purpose.

**#175 Public Concern: The Flathead National Forest should consider monitoring results of noxious weed infestation from past management actions in the district.**

Please include in the analysis the results of monitoring of noxious weed infestation from past management actions in the District.

**Response:** A noxious weed inventory within the project area occurred during floristic surveys conducted in June and July of 2002. The results of these surveys are included in the FEIS. Inventories of invasive species outside the project area are not included in this EIS as they are outside the analysis area.

**#176 Public Concern: The Flathead National Forest should assess the possible effects of noxious weed introduction on sensitive plant populations and biodiversity.**

Please include in your analysis the possible effects of noxious weed introduction on Sensitive plant populations and other components of biodiversity.

**Response:** This issue was not addressed, as there are no predicted effects from noxious weeds on the two known sensitive plant populations in the project area. Extensive floristic surveys were conducted in all areas proposed for ground-disturbing activities. These surveys focused specifically on sensitive plants and noxious weeds. Of all surveys conducted, only two units contained sensitive plant populations. In these sites, no noxious weeds were found (the majority of the noxious weed populations within the fire perimeter are along roads or in gravel pits). Given the prolific regeneration of native vegetation, the forest botanist does not expect noxious weeds to become established in these areas and pose a threat to these populations of sensitive plants. For extensive documentation of the results of the floristic surveys, reference the project record.

**#177 Public Concern: The Flathead National Forest should justify proposed management activities that could contribute to noxious weed spread.**

The stated Purpose and Need would be well-served by limiting the type of management activities that facilitate the spread of noxious weeds. Is the Forest Service really unable to manage the forest without building or reconstructing more roads or conducting more logging? Have the costs and benefits of logging been weighed against the long-term costs of invasive species control necessitated by the manipulation proposed here? How are these activities necessary for maintaining healthy ecosystems? What are the true costs of invasive species associated with logging sites, roads, mineral development and other habitat manipulation? We challenge the FS to give an accurate percentage of the miles of roads on the FNF that have never had noxious weeds. Likewise, these infestations on the roads readily expand into cutting units, especially the more intensive the logging done in the particular units. The FS just throws up its hands and accepts that they will be carrying out management activities that inevitably cause more spread of weeds, disingenuously accepting the halfway mitigation measures in the DEIS as "prevention" strategy! The premier tool of prevention of new noxious weed invaders deserves the highest priority. Instead, all prevention strategies assume weeds will invade, then prescribe expensive control methods of unknown efficacy after the fact. Without first significantly reducing the type of soil disturbing activities that facilitate noxious weed invasion, any proposed treatment effects may be negated, indeed, overwhelmed by the spread of weeds caused by more of the same road building and logging. . . . We are also concerned that the proposal will open up the forest, cause soil drying and allow for the propagation of introduced species (DEIS 2-20; DEIS Design Features, DEIS Appx, DEIS-Vegetation).

**Response:** The specific concerns raised in this comment are addressed as follows: (1) the alternatives in the FEIS proposed no road construction or reconstruction; (2) the area already had invasive and noxious weed populations before the fire occurred; (3) the Moose Fire "disturbed" tens of thousands of acres, opening up the forest by killing the vast majority of trees within the fire perimeter; (4) treatment of noxious and invasive weeds in the Moose Fire area was identified as a high priority in the Burned Area Emergency Rehabilitation plan (Project record \*\*) and Post-Fire Assessment (Project record \*\*); (5) noxious and invasive weed treatments are not part of the decisions being made in this EIS – integrated pest management treatments were authorized by a 2001 Decision Notice and are addressed in the Moose FEIS as ongoing and foreseeable actions that will occur regardless of Moose alternative selection; (6) funding for post-fire noxious and invasive weed monitoring and treatment was sought and approved immediately following the fire therefore the costs of these treatments are not pertinent to the Moose decision; these activities are currently ongoing; (7) noxious and invasive weeds on the Flathead National Forest most commonly occur along roadsides; spread into adjacent uplands depends on habitat type, weeds present, and other site-specific parameters. All treatments in the proposed action were designed to minimize ground disturbance, in part, to limit the spread of noxious weeds. Approximately 79% of the harvest units would be winter logged or helicopter logged, two treatments that greatly reduce soil disturbance. The weed risk assessment in the DEIS (3-79 to 3-83) and FEIS displays the perceived risk by alternative from over 20 invasive species. As a result of the treatment design, it is

clear that the risk from this action is minimal when comparing the acreages that would be negatively affected. Priority is placed on new invaders, and prevention of weed spread as discussed in the DEIS (2-12) and FEIS.

**#178 Public Concern: The Flathead National Forest should manage national forests according to the Forest Service's sustained yield mandate.**

Return the forests under your care to the management practice of sustainable yield, the mandate set forth in the original chapter of the Forest Service.

**Response:** We are obligated to practice forest management under a sustained yield policy; however this is a concept applied at a much larger scale than the project level, such as at the level of the entire Flathead National Forest. Treatments proposed in the Moose Post-fire project, particularly ensuring that forest regeneration takes place on those lands within the suitable timber base, are developed under the direction provided by the Flathead Forest Plan, with the underlying concept of sustaining healthy and well stocked forests for the future.

**#179 Public Concern: The Final EIS should include a risk analysis of various management options for the project area.**

We are disappointed that the DEIS and the proposed action fail to deal with the compelling need to reduce the spread of spruce bark beetles to areas not directly affected by the fire. This disappointment also applies to potential salvage and fuels reduction activities that are not being proposed. Based on statements in the DEIS it appears that some publics and other governmental agencies are taking a very narrow view of this catastrophic wildfire and potential restoration efforts, while ignoring the risks associated with doing nothing. The potential risk to bull trout and grizzly bears over the long-term is much greater than the short-term impacts of treating these stands. What needs to be done is a comparative risk analysis that evaluates both the short- and long-term consequences of doing nothing and doing something. This analysis should be assessed for all the resources issues, concerns and opportunities.

**Response:** The analysis of the bark beetle situation addressed risk to resource values, in both the short and long terms. The results are disclosed in the DEIS and updated in the FEIS, with further detail contained in project file documents. We have proposed actions in the Moose Fire area to address the main purposes of recovering wood fiber and reducing bark beetle populations. Options developed around issues and concerns are reflected in the range of action alternatives within the EIS. "Doing nothing" is evaluated as well, under Alternative 1, the No Action alternative. See also response to Comment #159.

**#180 Public Concern: The Flathead National Forest should explain burned area closure decisions.**

Why is the burned area closed to the public? Are you ashamed of the ugly mess and trying to hide it?

**Response:** The vast majority of the burned area is not closed off to the public. Only two areas in the Demers Ridge and Elelehum Creek areas have been closed to provide protection to wildlife and plants. Some of the existing roads that were open prior to the fire have been temporarily closed to motorized use to provide for security for grizzly bears.

**#181 Public Concern: In order to protect resources in roadless portions of Big Creek and Coal Creek, the Flathead National Forest should not log or build roads.**

In order to protect the Big Creek and Coal Creek drainages, I would like to see no roadbuilding or logging in roadless areas. This area's fish, water, and wildlife are important resources that should be left undisturbed. Let's retain the critical forest cover for elk, lynx, wolverines, wolves, and bears. The streams in these areas would be impacted very negatively if logging were to occur here.

**Response:** None of the action alternatives propose any road building in the Inventoried Roadless Areas or elsewhere. Logging is proposed within some inventoried roadless areas in two of the four action alternatives, with

helicopter logging systems and very limited tree removal (harvesting only beetle infested Douglas-fir and Spruce). The Responsible Official has the option of choosing an alternative that responds to your concern.

**#182 Public Concern: The Final EIS should indicate where reforestation and restocking efforts have failed.**

The large square blocks of forest structure on the southwest side of Map 3-2 are noticeable. Are these indications of areas where reforestation or restocking has failed? What areas of reforestation and restocking failures exist in the project area?

**Response:** The “large square blocks of forest structure on the southwest side of Map 3-2”, (backside of Big Mountain) of which the commenter mentions are areas of currently multi-storied forest (trees from sapling size up to large diameter) that used to be in private ownership. They were logged in the late 1950s and early 1960s when they were under private ownership. They were transferred to National Forest ownership in 1998. They are fully stocked with trees of all sizes, and the Moose Fire did not affect this area. There are very few if any areas within the Big Creek watershed that would be considered non-stocked (except of course areas reverted to non-stocked by the Moose Fire area). Big Creek is characterized by relatively productive moist sites favorable to the establishment and growth of conifers.

**#183 Public Concern: The Flathead National Forest should address the adequacy of seed banks prior to proposing replanting in the burn area.**

The amount of conversion that is likely to be attempted during application of the funds Congress allocated to hazardous fuels reduction projects, plus the mega emphasis on salvage in lieu of commercial timber sales has already overload the capabilities of seed banks to provide the right seeds to the right consumers for the right sites. How can you be optimistic that replanting requirements can be met with seeds or nursery stock that are genetically proper for the Moose area?

**Response:** We have already planted over 800 acres within the Moose Fire area with Douglas-fir, larch, spruce and western white pine that is well suited to these sites. Additional seed at the nursery will be planted out for future reforestation in this area. We have recognized the potential future need for seed and seedlings that are suited for our locality. Cone collection programs and requests for adequate funding are and will continue to be stressed.

**#184 Technical and Editorial**

We note that Table 2-14 shows that Alternative 4 harvests 13.531 mmbf of timber volume, yet on page 3-21 it is stated that Alternative 4 would salvage 19.3 million board feet of timber. This inconsistency should be corrected.

**Response:** The FEIS contains updated information on all of the action alternatives.

### ***Fire and Fuels***

**#185 Public Concern: The Flathead National Forest should offer additional salvage sales outside of the current project area.**

The Flathead National Forest should pursue additional salvage operations outside of the current project area. There is a huge amount of additional work that needs to be done to reduce fuels created by the 2001 fire event.

Consider additional salvage operations outside of the current project area with emphasis on fuels reduction goals. While it may be outside of the analysis area for this project, Montana SAF strongly encourages the USFS to consider additional fuel treatment projects including commercial salvage, especially where significant timber and social resources can benefit from additional fuels reduction activity.

**Response:** The vast majority of commercial salvage opportunities are located within the “project area” depicted in the EIS. Refer to the discussion of Alternative 7 in Chapter 2 of the DEIS and FEIS for a discussion of why

additional salvage opportunities were dropped from detailed consideration. The analysis of post-fire fuels conditions did not identify significant risks associated with fuels accumulations over time in the Moose Fire area, with the exception of very specific areas adjacent to private land, the Big Creek Work Center, and the Big Creek campground.

**#186 Public Concern: The Final EIS should acknowledge the lack of evidence indicating that salvage logging reduces fire intensity.**

The DEIS's fire/fuels section is inadequate under NEPA because it fails to analyze or take into account the Forest Service's own study, which "found no studies documenting a reduction in the fire intensity in a stand that had previously burned and then been logged." See McIver and Starr, "Environmental Effects of Post-fire logging", U.S.F.S., PNW-GTR-486 p.19 (2000). This recent conclusion from the Forest Service's own scientists directly contradicts the assumption in the DEIS that medium and large fire-killed trees must be removed to prevent a future severe fire. The DEIS's failure to divulge this and analyze the implications renders the DEIS fatally flawed.

**Response:** The purpose and need for the project includes reducing the potential for beetle-caused mortality, and recovering merchantable wood fiber (refer to Chapter 1). The third item in the purpose and need addresses fuel reduction on specific sites adjacent to private property or administrative sites (not across the landscape as a whole). McIver and Starr may not have found studies, but empirical evidence would indicate if you put more wood on a fire, the heat intensity increases. One can stand substantially closer to a campfire than to a bonfire. The DEIS and FEIS does document numerous scientific references concerning how the reduction of fuels can reduce fire intensity and spread (DEIS 3-85, 3-91). Chapter 3, "Fire and Fuels," discusses this idea as "defensible space" in the DEIS and FEIS. Fuel reduction treatments are described in detail in Table 2-2 in the DEIS and FEIS, where it clearly states the majority of material removed is sapling and pole-sized or small diameter lodgepole, not medium and large fire-killed trees.

**#187 Public Concern: The Final EIS should justify the assertion that the proposed logging activities will reduce future fire risk.**

A major reason your DEIS provides for removing burned trees is that it responds to a vague need to reduce fuels. However there is no scientific support that salvage logging is needed to reduce risk of future fires. Beschta et al. (1995) state they ". . . are aware of no evidence supporting the contention that leaving large dead wood material significantly increases the probability of reburn." Additionally USDA (2000) states that "no studies have specifically looked at how post-fire logging alters the size distribution of fuel and the concomitant changes in future fire risk." In light of these findings, we request that the FNF provide specific cites of scientific support in the DEIS that the proposed logging activities will reduce future fire risk.

**Response:** Refer to the Purpose and Need for this project described in Chapter 1 of the DEIS and FEIS. The reduction of fuels adjacent to private property and administrative sites is a minor part of this project. The DEIS does document numerous scientific references concerning how the reduction of fuels can reduce fire intensity and spread (pages 3-85 and 3-91). Pages 3-91 to 3-93 of the DEIS addresses probability of a reburn and wildland fire starts and suppression. The EIS does not assert the proposal would influence the risk of fire occurrence. The Beschta Report was fully considered by the ID team in development of post-fire actions and analysis of environmental effects. Consideration of the Beschta Report is documented throughout Chapter 3 of the DEIS and FEIS, and specifically addressed in Appendix D of the FEIS.

**#188 Public Concern: The Final EIS should compare the potential for reburn on salvage logged and other post-fire sites.**

Is the possibility of reburn greater in salvage logged sites than post-fire sites (DEIS 3-92)?

**Response:** As stated on page 3-93 of the DEIS, "None of the alternatives have an influence on the time and place a natural fire may start. Also, fire behavior in the event of a reburn was discussed in the DEIS at page 3-90, where it is stated "Fuel loads in the salvaged units would be reduced to levels that would preclude intense fire behavior."

**#189 Public Concern: The Final EIS should analyze fire suppression impacts.**

We request that you thoroughly analyze the impacts of recent wildfire suppression activities on the forest. In fact, for example, two Forest Service hydrologists recently stated that the fire suppression efforts in 2000 caused more damage to the landscape than the actual fires (11/22/2000 Western News).

**Response:** The DEIS and FEIS address the impacts of fire suppression activities in various places in Chapter 3 (for example, hydrology – DEIS page 3-210 to 3-211; fisheries – page DEIS3-243 to 3-245; recreation – DEIS page 3-277).

**#190 Public Concern: The Final EIS should analyze historic and potential logging and road impacts on fire.**

The DEIS says the fire began in Whitefish Divide and quickly burned down the Big Creek drainage (DEIS 1-1). What role did past logging (slash, dry open conditions, roads, etc.) play in the severity, character or spread of the fire? What potential is there for proposed logging here or elsewhere to increase the risk, severity or rate of speed of future fires? And what is the potential for the vast road system in the project area to contribute to higher fire risk?

**Response:** The DEIS analyzed the fuels, weather, terrain and drought conditions that contributed to the intensity, severity, rate of spread and size of the Moose Fire (pages 3-85 to 3-89). This is also presented in Chapter 3 of the FEIS.

**#191 Public Concern: In its analysis of fuel loadings, the Final EIS should account for the different flammability of various tree sizes.**

The fuels section of the DEIS is flawed under NEPA because it fails to distinguish between very small diameter fuels (under 3" in diameter) and large fire-killed trees and large logs in terms of future fire behavior and intensity. The DEIS provides not one shred of scientific evidence that medium and large (over 12" dbh) fire-killed trees must be removed to reduce future fire risk and severity. All of the studies cited by the DEIS in the fire/fuels section (e.g., Rothermel, Brown etc.) pertain only to future fire severity that can be caused by accumulations of very small diameter material less than 6 inches in diameter and usually less than 3 inches in diameter. These studies do not pertain at all to medium and large trees (12" dbh and larger), and the DEIS, fails to explain why future fire severity could not be effectively prevented by reducing fire-killed material up to 6 inches in diameter, or up to 12 inches in diameter, through periodic manual treatments (including piling and burning, or mastication) and prescribed fire. This failure renders the DEIS inadequate under NEPA, which requires the Forest Service to provide valid and credible scientific citations and basis for its decisions.

**Response:** The purpose and need for the project (see Chapter 1 of the EIS) does not include the reduction of future fire severity across the landscape, and the EIS does not assert that medium and large trees must be removed to reduce future fire risk and severity. It **does** propose to remove medium and large trees that are at risk or infested with bark beetles, and/or to recover merchantable wood products. Removal of sapling and pole-size lodgepole is prescribed for fuel reduction treatment on small and very specific areas that are adjacent to private property and administrative sites, as described in the DEIS and FEIS. See also response to comment #186.

**#192 Public Concern: The Final EIS should establish aggressive fuel reduction methods in the burn area.**

Fire and Fuels, Page 3-84 to 3-95: The DEIS makes a compelling argument that you should more aggressively pursue the reduction of post fire fuel loading to reduce the risk and severity of a re-burn event. "When a large and unusually severe fire occurs, it ultimately creates a correspondingly large mass of heavy fuels, starting 2-15 years after the fire when much of the dead timber has fallen (Arno, Parsons and Keane 1999, Lyon 1984). This becomes incorporated into a new dense fuel bed with small conifers and large shrubs, which can readily support another severe wildfire, often called a reburn or "double burn" (Arno, Parsons and Keane 1999). DEIS Page 3-85. The Proposed Action does not even begin to address this issue--especially if the

beetles "escape" and cause massive additional mortality. You will have to take aggressive action, subsequent to this initial project, to address a comprehensive fuel treatment across the whole Moose Fire area.

We need to get our forests cleaned up, or are we going to let them burn again, and again. Let us clean them up to reduce further fires.

**Response:** Fuel Reduction Zones (where fuels would be reduced and the fuels would be managed long term to reduce fire intensity, severity and rate of spread) were identified for small, very specific areas to help protect private property and the administrative sites within the project area.

**#193 Public Concern: The Flathead National Forest should consider using prescribed fire to reduce fuel hazards.**

The FS should consider the option of reducing fuel hazards using prescribed burning (DEIS 2-43).

We note that we share Beschta's concern that current policies appear to continue to restrict the role of the natural fire disturbance process in forest ecosystems. As you know fire suppression has changed the landscape of the forest, and caused a shift from frequent low intensity ground fires to less frequent severe crown fires, and resulted in landscapes with substantial deviation from the pre-settlement disturbance processes. We realize that there are needs to protect life, property and resources in and near forests, but there is also a need to restore fire disturbances to the forest ecosystems that evolved with fires. We are concerned that the balance between these trade-offs remain skewed toward fire suppression and limited introduction of prescribed fire. We are concerned that this will cause fuel hazards to continue to grow, the potential for large severe crown fires to increase.

**Response:** The few fuel reduction treatment areas are adjacent to private property and/or administrative sites, and were already affected by the Moose Fire. The safest and most economical way to treat these areas is mechanically. We certainly agree that restoring fire disturbances to ecosystems that have evolved with fire is a desirable objective, and that prescribed fire is a very useful and important means to achieve this. Current policies, as well as concerns for effects on other biological and social resources, limit our ability to use this tool. In any case, altering current fire suppression policies is outside scope of this project.

**#194 Public Concern: The Flathead National Forest should limit wildland/urban interface thinning to the immediate vicinity of homes.**

We request that the wildlands urban interface be more thoroughly defined including distance from structures and substantiation. US Forest Service research suggests that fuels in the immediate vicinity of homes and the home itself are the primary determinants of flame ignition. Fuel treatment beyond the immediate vicinity of homes may be of limited utility in reducing firebrand ignition of structures (USDA 1999). . . . Cohen (USDA 1999) suggests that thinning and burning activities should be confined to within 40m of structures to be most effective. The project should not include any fire reduction methods beyond approximately 40m from any structure. We would support fuel reduction efforts immediately adjacent to buildings, but it is not clear that the FNF understands that the scope of such efforts must be quite limited in order to be ecologically and economically sensible.

While we support the proposed fuel reduction efforts at the Big Creek Campground and Glacier Institute site, we're not sure similar efforts, with scarce resources, are best placed on public lands adjacent to private property unless they are within 200 feet or less of one another. As you know, recent studies have demonstrated that creating defensible space within 150 feet of homes is the most effective measure. In areas where public land is within that 150-200 foot distance of residences we think fuel reduction is reasonable. However, such activities hundreds of yards, or more, from private residences are highly questionable as tools to reduce fire danger for private homes.

**Response:** The goal of fuel reduction near private property and administrative sites was not limited to creating defensible space around structures. On page 3-93 of the DEIS, we mention that a structure can be threatened in several different ways – direct exposure from flames, radiated heat, and airborne firebrands. We acknowledge “fuels can be treated in a relatively small area immediately adjacent to structures to reduce expose to flames and radiant

heat.” However, we also add that our proposed fuel reduction treatments would “maintain fire resistant tree species, light surface fuels, and no ladder fuels. This would provide a greater fuel reduction area and minimize the short-range and long-range spotting threat associated with those stands during wildland fire.”

**#195 Public Concern: The Flathead National Forest should reconsider its proposal to treat local areas for fire prevention.**

The DEIS discloses that the probability of reburn is small at any given site: The probability of reburn is small on any one site, but it is high over a large area. Even if the reburn hypothesis were well supported by science, the feasibility of treating an entire landscape would be low. The fuel treatments by Brown et al. (2000) are intended to eliminate intense local severe soil burning. Science has thoroughly acknowledged that the small fuels, burned by fire, are the primary vectors of wildfire spread. As the proposed fuel treatments address local issues, they are intrinsically ineffective according to the above statement. Treating local areas is insensible, as any area has only a low risk of future reburn.

**Response:** Your comment that “treating local areas is insensible” appears to directly contradict your previous comment in #194, that states fuel reduction “efforts must be quite limited in order to be ecologically and economically sensible.” Our very limited fuel reduction proposal rests on the science and concern for firefighter safety, as cited in Chapter 3, Fire and Fuels. Fuel reduction on the landscape is not part of the purpose and need and no proposals for doing so are contained in any alternative presented in the DEIS or FEIS.

**#196 Public Concern: The Flathead National Forest should extinguish all forest fires immediately upon identification.**

Extinguish fires immediately instead of waiting until they are out of control.

**Response:** The DEIS states (3-85) that the appropriate management response for all wildland fires under the existing Flathead Forest Plan requires that all fires be suppressed using the appropriate management response. Wilderness areas are excluded if covered under an approved Fire Management Guide or Plan. Fire suppression direction and policy are well beyond the scope of this project-level analysis.

**#197 Public Concern: The Flathead National Forest should allow the Moose Fire area to recover naturally.**

I am writing to urge that the Forest Service and state abandon plans to log the forests burned in the Moose wildfire. Fire is as natural as rain, snow, wind and the sun, and has been around as long as forests. Nature has been handling forest fire recovery efforts for thousands of years and did a tremendous job. Let nature do the recovery job. Every standing-dead and downed tree plays a specific and essential role in the natural recovery of a burned area. Dead trees are not wasted resources.

Considering that the forest has evolved to include fire and has developed processes to regenerate following fire, we believe that aspects of your proposal, such as salvage logging and tree planting, may disrupt the natural process of forest regeneration. The relatively low level of human understanding of post-fire forest regeneration and potential for significant impacts of restoration actions on sensitive post-fire ecosystems suggests that a carefully contemplated, rather than hasty, response will be essential for forest recovery.

**Response:** See response to concerns #56, #25, and #38.

**#198 Public Concern: The Final EIS should analyze post-fire logging's potential to disrupt regeneration.**

Please grant particular consideration to the abundant scientific evidence addressing the potential damage associated with post-fire salvage logging. We elaborate upon such issues in the following paragraphs. Considering that the forest has evolved to include fire and has thus developed ways to regenerate successfully following fire, salvage logging can only disrupt this natural process of regeneration.

**Response:** See response to concern #56.

**#199 Public Concern: The Final EIS should base analysis on the assumption that natural patterns will be reestablished.**

The DEIS seems to presume that massive fires are the only fires that happen in Forests and that timber that falls will all burn at one time in the future. As discussed above, the DEIS should presume that healthy and natural burn patterns and habits will return, not that there will be a buildup of fuels as there has been in the past 50 years. With its analysis, the DEIS seeks the opposite extreme of fuel buildup: Rather than suppressing fire so that there is a massive buildup and extreme fire, the DEIS uses fire as a justification to remove fuel that decades from now could be fuel for a fire.

**Response:** The proposed action is not based on the need to reduce fuels across the landscape, but to avoid potentially extreme fire behavior in the future near specific sites such as private property and administrative sites (refer to purpose and need for the project in Chapter 1 of the EIS, and responses to comment #186, #187 and #191). In this ecosystem, stand replacing, high severity burns, are “natural”, as was the Moose fire. The Flathead Forest Plan dictates the appropriate level of fire suppression for each management area. Fuel reduction is proposed on a maximum of 208 acres, on areas adjacent to private land and administrative sites.

**#200 Public Concern: The Final EIS should take into account the natural range of variability for forest cover and fire intensity.**

The EAWS [ecosystem assessment at the watershed scale] states that most forest cover types were within the desirable range of historical conditions before the fire (DEIS 3-7). The FS also states that the Moose Fire was not outside of the historical range of fire severity by all evidence available to the FS (DEIS 3-9). How would this have affected the behavior of the fire or the on-the-ground conditions after the fire? How did fires historically behave in the absence of man-caused habitat manipulation? How was vegetation affected in the absence of man-caused habitat manipulation? Why is there a "need" to log at all? DEIS 3-10 and the figures on DEIS 3-11 provide information on the purported forest structure before and after the fire. To what degree is it known how many stands fit into the exact categories shown? To what degree are there mosaics of burn severity and vegetation retention that may not be indicated? For example, what degree of variation is there within the stand initiation category? And to what degree will this lead to possible over-cutting in some areas where living trees, snags and other forest cover occur?

**Response:** The purpose and need for the proposed actions are clearly stated in Chapter 1 of the FEIS. The purpose of the Environmental Impact Statement is to address and disclose potential effects of proposed actions on the affected resources. Background information on the pre-fire vegetation conditions, historical fire regimes, hydrologic conditions, past timber harvest, among others are disclosed in Chapter 3 of the FEIS to provide a context for the effects analyses. The accuracy of this information is dependent upon its source, which in the case of the vegetative conditions originates from the analysis conducted in the Big Creek EAWS (project record V-8 and O-28). Photo interpretation with extensive verification through field surveys, is the basis for most of the vegetation information.

**#201 Public Concern: The Final EIS should consider restoring areas that have been damaged by fire suppression activities.**

We believe that removing the impacts of fire suppression, rather than logging trees, is the most justified form of restoration work.

What restoration activities will be or have been taken to mitigate the impacts of fire suppression actions? For example, we request thorough discussion and description of fire line impacts. What restoration actions will be or have been undertaken to insure that these fire lines are not used by Off-Road Vehicles (ORVs) or otherwise perpetuated as a source of forest fragmentation?

**Response:** Fire suppression rehabilitation took place in the fall of 2001. The DEIS addresses the impacts of fire suppression activities in various places in the DEIS and FEIS (for example, hydrology – page DEIS 3-210 to 3-211; fisheries – page DEIS 3-243 to 3-245; recreation – DEIS page 3-277). As we mentioned on page 3-277 of the DEIS, fire suppression activities did not increase opportunities for off-road vehicle use. All fire lines were blocked and rehabilitated.

**#202 Public Concern: The Flathead National Forest should retain existing roads to allow access to fight forest fires.**

There should be no road destruction (you call it decommissioning) at all, let alone what you are trying to tie to this salvage sale. Part of the reason the Moose Fire was so big was the inability to access it. Destroying more roads surely will not help this situation in the future. It will only allow someone an excuse as to why they can't get a fire under control, and an excuse as to why the land should never be actively managed for multiple uses which include recreation and logging.

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There shouldn't be any other road closures. In fact build more roads. The fires get bad around here because of the inability to get to them.

**Response:** Please refer to numerous previous responses to comments regarding the need to decommission roads in the area, and why new road construction is not appropriate. In the DEIS on pages 3-93 and 3-94 (and again in the FEIS), we acknowledged that the proposed road management changes could result in different ways of responding to fires such as through smokejumpers or helitack crews.

**#203 Public Concern: The Flathead National Forest should retain existing roads to facilitate post-fire regeneration.**

I am opposed to destroying (decommissioning) any roads at this time because you can't manage something you can't access. Roads should be left in place for fire access and recreation access. Also for access to get to areas destroyed by fire so regeneration of a healthy forest can be achieved.

**Response:** See response to comments 15 and 106.

We have very clearly heard from many people that they are not interested in any or as many road closures as we initially proposed back in January. This is why we included an alternative (Alternative 3) that does not propose as many road closures or decommissioning in order to address some of the public's desire to have access for recreational pursuits on roads like Road 316 (upper Big Creek Road) or Road 1658 (Werner Divide Road). This alternative would still improve habitat for grizzly bears and bull trout but not at the same level as the other alternatives propose. This alternative would require project-specific amendments to the Forest Plan and concurrence from the USFWS if this alternative were to be selected. In the DEIS and FEIS, we acknowledged that the proposed road management changes would have effects on fire suppression actions. See response to comment #202.

**#204 Public Concern: The Flathead National Forest should retain existing roads and harvest timber to prevent future wildfires.**

If more roads were open for harvest and firewood gathering there would be less fuel for fires and more firebreaks.

The new slogan that I am starting to say here is, "Help Prevent Forest Fires, Close the U.S. Forest Service." Do not close another road. It is time to stop closing our forests so they burn. Start opening them and logging them to promote our forest health, and keep the citizens of Montana safe.

**Response:** See response to comments #202 and 203.

**#205 Public Concern: The Flathead National Forest should leave Road 316 open to act as a firebreak.**

As thousands of our forests are being destroyed by fire, the closure of Road 316 (backside of Big Mountain) is unacceptable. Closing this road under the current plan will also destroy the last firebreak between thousands of forested acres, Big Mountain Resort and the community of Whitefish, MT! You must not allow this to happen!

**Response:** See responses to comments #202 and 203. Alternatives 3 and 5 proposed to re-open the portion of Road 316 that occurs on the backside of Big Mountain.

**#206 Public Concern: The Flathead National Forest should leave Road 316 open as a potential fire-fighter escape route during future fires.**

Road 316 was used by firefighters on the Moose Complex last year as an escape route. It was permanently gated from the intersection near Werner Peak on the West to Canyon Creek on the East in October. At least 7 miles of Road 316 are slated for highly costly and extremely shortsighted destruction. This constitutes an open invitation for the next catastrophic forest fire to devastate Big Mountain and then Whitefish. This closure removes the only viable firefighting route for over 50 square miles of National Forest.

"Murder on your hands." Is this what you want? If volunteer and paid firefighters cannot have a safe way out of an area then you will become willful murderers. Sound harsh? You're darn right. One example: the 14 men in Colorado had no way out or around to safety. Don't murder your friends or kin. Leave 316 open—no reason to close it.

**Response:** See response to comments #202 and #203.

**#207 Public Concern: The Flathead National Forest should close roads to prevent forest fires.**

Fire occurrence is highly correlated with the presence of roads, as many Midland fires are caused by human activities. Areas of high road density are areas primed for fire starts, due to human access. The FNF should consider closure and obliteration of roads and proper enforcement of road closures as fire prevention tools.

Closing roads also minimizes the potential for person caused fires that may occur because of reduced travel along roadways.

**Response:** See response to comments #202 and #203.

**#208 Technical and Editorial**

Map 3-14 is not readable.

**Response:** We regret that some of the copies of Map 3-14 were not readable. We did not discover this error until we were in the process of publishing the DEIS. Some copies were completely clear, but the color in others was washed out, rendering the map difficult to interpret. This problem has been rectified in the FEIS.

**Wildlife**

**#209 Public Concern: The Final EIS should include an effects analysis for all species listed in the Draft EIS.**

The FS must provide site-specific evidence as to why the species that are not discussed further (see DEIS 3-123) do not warrant further consideration. Is it true that the no suitable conditions for any of the species exist in the project area? Why were boreal toads analyzed but some other amphibians were not? The FS does not provide an effects analysis for all species in the DEIS.

**Response:** As stated in the DEIS (3-123) and FEIS, certain species were not discussed further for the following reasons: a lack of habitat or lack of effects [from the proposed actions] to their habitats. Additionally, the rationale for their exclusion is presented in the Project Record (Rs-6 to Rs-14).

**#210 Public Concern: The Final EIS should explain the selection of only the Big Creek watershed as the wildlife analysis area.**

What is the basis for selecting only the Big Creek watershed as the analysis area for wildlife (DEIS 3-96)? There is no connection between the wildlife in Big Creek watershed and other areas impacted by the fire?

**Response:** The basis for selecting only the Big Creek watershed for the wildlife analysis is (as mentioned in the DEIS at 3-89) is that, with the exception of the fuels treatment site adjacent to private land near lower Coal Creek, the Moose project would only directly affect a relatively small portion of the Moose fire-affected area within Big Creek. Only in the case of the wolf (Whitefish Pack), because of this pack's known occasional use of Coal Creek, did the analysis include area outside of Big Creek watershed. To include a larger area outside of the Big Creek drainage would only dilute potential effects for other wildlife analyses.

In most cases, the scale of analysis matters with regard to being able to determine impacts or effects from management actions on wildlife/habitats. In the case of the Moose fire, the larger the analysis area the more 'washed out' the effects will be. Of the approximately 35,000 acres of the Moose Fire that burned on National Forest land, less than 10% has been proposed for salvage treatments. If the entire approximately 71,000 acre Moose fire was used as the analysis area, then the Moose Post-fire Project's salvage treatment portion of the proposed action would constitute less than 5% of the burned landscape. As mentioned above, the smaller the proportion a proposed management activity is, the harder it is to determine effects.

However, in response to this and other similar comments, the ID Team looked at distribution of habitat for certain species at the Forest scale. Refer to the Wildlife Section in Chapter 3 of the FEIS and the Project File for more information on this Forest-wide assessment.

**#211 Public Concern: To comply with federal regulations, the Final EIS should address population viability and species distribution for all species of concern.**

USDA Regulation 95004 requires that: Habitats for all existing native and desired non-native plants, fish and wildlife species will be managed to maintain at least viable populations of such species. In achieving this objective, habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range. We request that studies address the related issues of "population viability" and "distribution throughout its geographic range" in regards to all species of concern in order to comply with USDA Regulation 95004 and 36 CFR 219.19. In other words, the analysis should establish that the species in the analysis area are still part of viable populations in the surrounding landscape following the impacts from past development actions on lands of all ownership. The analysis should be expanded to include a cumulative effects analysis area that would include truly viable populations. Identification of viable populations must be done at some geographic scale. This means if the analysis cannot identify viable populations of MIS and TES species of which the individuals in the analysis area are members, the analysis fails to assure the maintenance of viable populations, violates NFMA, and falls far short of meeting the requirements of a scientifically sound "ecosystem" analysis. Sound rationales for these should have been provided in the DEIS. To adequately analyze population viability, you must explicitly consider population dynamics. Population dynamics refers to persistence of a population over time—which is key to making predictions

about population viability. The Districts should fully analyze population growth rate, population size, linkages to other populations, and the dynamics of other populations in examining population dynamics.

**Response:** The requested analysis has been completed, with results disclosed in the Wildlife section of Chapter 3 in the FEIS. Further documentation is contained in the Project File.

**#212 Public Concern: The Final EIS should describe past management action effects on plant and animal populations and diversity of habitat types within various geographic ranges.**

Disclose whether past management actions have extirpated or significantly reduced any plant or animal species from the analysis area. Disclose how combined past management actions have affected or reduced the diversity of habitat types in the analysis area, the entire National Forest, and the region.

**Response:** Both the DEIS and FEIS have disclosed this information and can be found in the description of the 'Affected Environment' and in the 'Cumulative Effects' section of the documents. Additionally, a document entitled 'Big Creek Ecosystem Analysis at the Watershed Scale-Big Creek Geographic Unit' (USDA Forest Service 1999; Project record exhibit U-1) also contains findings of past management effects

**#213 Public Concern: The Final EIS should analyze habitat fragmentation resulting from both cumulative and proposed actions.**

The continued fragmentation of the Forest also needs to be a major analysis issue for this proposal. Since roughly a quarter of this project area has already been impacted by logging and additional acres have been burned in the Moose Fire (DEIS), fragmentation is, and ought to be a major concern for the FS. That is, the size of blocks of interior forest that existed historically before management actions (including fire suppression) were initiated needs to be a point of comparison with both the present condition and in terms of all action alternatives. Again, this should be a landscape ecology-type analysis which looks at the larger picture of the fragmentation of habitat in surrounding concentric circles. Will the proposed alternatives tend to further fragment the habitat for plants and other wildlife given the already fragmented landscape from past logging and road building activities?

**Response:** Fragmentation is defined as: 'The alteration of a large habitat patch to create isolated or tenuously connected patches of the original habitat that are interspersed with an extensive mosaic of other habitat types. This results in the reduction of total area, increased isolation of patches, and reduced connectivity between patches of natural vegetation. This occurs naturally through such agents as fire, landslides, windthrow and insect attack. In managed forests, timber harvesting and related activities have been the dominant disturbance agents.' Given this definition which is in the DEIS and FEIS (Glossary – 5), it was assumed that there was common knowledge that the entire burned portion of the Moose Fire area became the fragmented portion of the Big Creek and Coal Creek drainages, as well as that portion of Glacier National Park that burned. Considering that the Moose Post-fire Project (at least the timber salvage part of the project) would occur within the burned and resulting fragmented portion of the Big Creek drainage, it seemed obvious an analysis of fragmentation was not necessary, given that the proposed project would not further fragment the landscape. However, at the site-specific level, the salvage program had implications of fragmentation for the black-backed woodpecker, the effects of which were documented in the DEIS (3-124 to 128). Therefore, considering that the Moose Post-fire Project (salvage logging aspect) would occur within the area that the Moose Fire already changed into a fragmented patch of the landscape, an analysis of habitat fragmentation was deemed unnecessary.

**#214 Public Concern: The Final EIS should describe the trade-offs between wildlife and soils regarding winter logging impacts.**

It would appear appropriate to utilize winter logging in Alternative 4 on the units identified on page 3-167 (i.e., 3, 4, 8, 10, 19, 21, 28, 29, 35, 43, 44, 62) to maintain soil productivity and reduce erosion. Do the impacts of wildlife disturbance from winter logging outweigh potential soil impacts and erosion and sediment transport to Big Creek or its tributaries if winter logging is not used? Can potential wildlife disturbances from winter logging be more clearly described so these trade-offs can be better evaluated by the public?

**Response:** The DEIS and FEIS contain a description of probable effects on winter range and ungulates using winter range (DEIS 3-140; FEIS). It probably is not possible to know exactly how deer and elk will respond to logging associated disturbances during winter, especially in a situation where forage resources are at minimum levels. A variety of behavioral adjustments would be made and possible indirect mortality may result, as disclosed in the DEIS and FEIS.

**#215 Public Concern: The Final EIS should evaluate salvage logging impacts on wildlife habitat structure and variability.**

Given our limited understanding of the cumulative effects of fires suppression and post-fire salvage logging, and their effects on post-fire habitat availability across western landscapes, the DEIS needs more evaluation of the effects of salvage logging techniques at the proposed large scale of this project. Fire has played a dominant role in the Northern Rockies causing a rich mosaic of plant communities across the varied landforms of western Montana. . . . The DEIS mentions the need to maintain the fire-created mosaic or patterns on the landscape; however, it does not address the effects that salvage logging and replanting will have on specific within-stand natural patterns resulting from large-scale fires: These landscape patterns depend on such factors as pre-fire ecosystem structure and species composition, local patterns of fire severity, and unpredictable post-fire events including year-to-year variations in climate. This combination of variables is responsible for the landscape heterogeneity in the Northern Rockies and will undoubtedly contribute to the future heterogeneity of this landscape. Salvage logging and replanting at the scale proposed in the project would only disrupt the natural patterns created by the 2000 fires, thereby decreasing overall landscape heterogeneity within this area. Many plant and animal species have evolved within the context of these natural landscape patterns over time and the simplification of these patterns will have a large impact on species habitat amount and configuration in the short- and long-term.

**Response:** The only “within-stand natural patterns” that would be modified by the activities in the alternatives would be removal of dead, dying and beetle-infested trees. The DEIS (3-143 to 3-153) did a thorough analysis of the ‘snag and downed wood habitat’ component. Resulting impacts/effects from salvage logging to wildlife habitat structure have been displayed in Chapter 3 of both the DEIS and FEIS. The Vegetation section of the FEIS also discloses what trees are proposed for removal, that a few of the trees predicted to die may have lived, and that many of the trees predicted to live may die. The environmental effects of tree removal and tree retention is disclosed throughout Chapter 3 of the FEIS.

**#216 Public Concern: The Flathead National Forest should maintain viable populations of all indigenous species.**

The National Forest Management Act requires the Forest Service “to provide a diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple use objectives . . .” [16 USC 1604(g)(3)(B)]. Under CFR 219.19 the Forest Service is mandated to maintain viable populations of forest vertebrates. Species should be well distributed across the forest to provide for their long-term survival. Further forest provisions that relate to species viability are Forest Plan goals 1 and 7. These goals state, provide habitat for viable populations of all indigenous wildlife species and for increasing populations of big game animals, and for threatened and endangered species occurring on the Forest . . . manage to contribute to the recovery of each species to a non-threatened status. While these are requirements that NFMA established, the Flathead National Forest seems to be purposefully ignoring these.

**Response:** See the response to comment #211.

**#217 Public Concern: The Final EIS should emphasize the Forest Service obligation to enhance critical habitat for species listed under the Endangered Species Act.**

Within the opening discussion, the desired conditions of this area are explored. Please understand, I am totally supportive of your three targeted purposes; however I believe that there may be a glaring error that you do not list as a purpose your obligation under the Endangered Species Act to enhance critical habitat for listed species. My point is that it should not be a “side issue” for the agency, but a primary mission, which, in my opinion is not a conflict with the other stated purposes and

needs. Over the last decade, the apparent conclusion from inter-agency review of projects by the Forest Service and US Fish Wildlife Service seems to focus strictly on direct affects or potential taking of listed species, with a gloss-over of a solid review of long term habitat issues. The results, whether intended or not, appear to ignore the likelihood of any future “train wrecks” and focus on the short-term issues.

**Response:** The action alternatives presented in the DEIS and FEIS would all make long-term improvements to habitat for listed species. For grizzly bear, the most significant habitat component is security associated with roads. All alternatives would improve the current situation, resulting in improved grizzly bear security. For bull trout, the largest risk is sediment delivery. All action alternatives propose to decommission many miles of road, removing stream crossing culverts and reestablishing stream channels in these areas. These activities would have a long-term benefit to bull trout. The fire itself has created a large increase in bald eagle habitat. The fire also changed lynx habitat, and no opportunities to improve habitat for this species were identified. Those are the only listed species that would potentially be affected by proposed actions. Refer to the Wildlife section of Chapter 3 in the FEIS for more information.

**#218 Public Concern: The Flathead National Forest should prioritize Endangered Species Act habitat requirements over Amendment 19.**

I suggest that the requirement of habitat management under the ESA takes a superior position to that of Amendment 19 of the Forest Plan. An amendment to a management plan constitutes a decision in time that thereafter, becomes sacrosanct. The ESA is a law that is expected to depend on the current best science available at the time of a biological assessment.

**Response:** Amendment 19 responded to the best available science when it was approved in 1995. There has been no other grizzly bear related research projects that have cast any doubt on the validity of the research foundation that Amendment 19 is based on. Additionally, the mission of the Endangered Species Act is to recover and de-list listed species. Providing a level of grizzly bear habitat security that provides for population recovery is what Amendment 19 does when fully implemented. Therefore, indirectly, Endangered Species Act requirements are being prioritized through the implementation of Amendment 19.

**#219 Public Concern: The Flathead National Forest should adopt measures more protective than Amendment 19 for listed species.**

While the DEIS says that its proposed alternative will result in meeting Amendment 19 road density standards for grizzlies, we remind you that those standards apply to an unburned forest. Even the DEIS notes the almost complete loss of security cover in many areas—a loss likely to impact grizzlies, elk, wolves, lynx and many other species. Under those circumstances, it’s clear that the proposed restrictions (21 mi.) and decommissioning (57 mi.) are inadequate to protect listed species, and the Forest should seriously consider adopting more protective options, such as the 87 miles of decommissioning under Alternative 4. At a minimum, such additional protection should take place for the next 10-15 years while the understory regenerates.

**Response:** The Responsible Official (decision maker) has adequate information on which to consider Alternative 4, which provides the highest level of habitat security among the alternatives. Chapter 3 of the FEIS also discloses the trade-offs of selecting this option.

**#220 Public Concern: The Flathead National Forest should implement Amendment 19 to reduce snowmobile traffic impacts on wildlife.**

Forest Plan Amendment 19 requires all stream-bearing culverts be removed from decommissioned roads to protect fish and wildlife. Roads must be decommissioned “in a way that will discourage use as a motorized or non-motorized travel way.” The DEIS acknowledges allowing snowmobile use of decommissioned roads would make it impossible to reduce the stress snowmobile traffic is putting on wintering big game animals. This also harms rare winter wildlife, like wolverine and lynx. Full implementation of amendment 19 is overdue and required to provide adequate wildlife security. No exceptions! Do not reopen Road No. 316. Providing culverts and helping maintain access for snowmobiles on decommissioned roads per the Montana Wilderness Association agreement violates Amendment 19. (Individual, Kalispell, MT - #2)

Elsewhere, the DEIS makes it clear allowing snowmobiling to continue in Big Creek, especially on decommissioned roads, will have adverse effects on big game (at 3-138-139), lynx (at 3-122), and wolverine (at 3-129). The DEIS makes it clear that significant gains in wildlife security for these wildlife species simply can't be accomplished if snowmobile use of decommissioned roads is allowed, let alone made easier. Providing winter motorized access will only compound the problems Rocky Mountain Elk Foundation's Al Christensen emphasizes in the March/April 2002 edition of Bugle magazine: "It's simple biology and common sense. If a wildlife population is weakened by land management decisions—in this case motorized access—you'll have higher losses from everything: winter mortality, predation, accidents and disease." Given the tremendous reduction in hiding and thermal cover in the Moose Fire area, the security/protection afforded wildlife from snowmobiles in the DEIS proposals is nothing short of pathetic.

(Biological monitoring) This should not only include fisheries, but the impacts that may be associated with the Winter Recreation Agreement on grizzly bears, wolverine and deer/elk winter range. If detrimental wildlife impacts (from snowmobiling) are noted over the ensuing ten year period (after salvage harvest), then full implementation of A-19 standards would be warranted.

**Response:** The commenter is correct that the Forest Plan as amended requires stream aligned culverts to be removed before a road can be considered "reclaimed" for grizzly bear security purposes. Under Alternatives 2, 4 and 5 this requirement would remain unchanged and stream-crossing culverts would be removed from roads scheduled for decommissioning. Alternative 3 contains a project-specific Forest Plan amendment that would modify this requirement by allowing 10 specific stream-aligned culverts to remain in place (once they have been upsized to accommodate 100-year flow events). Should the Responsible Official include this project-specific amendment in her decision, retaining these culverts in place would comply with the Forest Plan, as amended.

Amendment 19 specifically amended the Flathead Forest Plan with new standards for managing grizzly bear habitat. Certainly, there are implications for other wildlife species that benefit from decreased levels of motorized access. However, the existing situation is that most roads within the Big Creek drainage are currently (and have always been) open to snowmobile use and if snowmobile use is allowed to continue on decommissioned roads, this would constitute no change to the environmental baseline (i.e. existing condition) to non-target species for which Amendment 19 was not focused on. Grizzly bears would still benefit from implementation of Amendment 19 during the non-denning season, however, other species that do not den during the winter would continue to experience whatever impacts are occurring and have occurred for decades from winter snowmobile use of travel ways.

**#221 Public Concern: The Final EIS should not include the claim that proposed logging and road management may result in ineffective use of winter range by big game.**

DEIS Summary, page 4, item 7. Empirical evidence would show these hillside areas are not the wintering range for wildlife.

**Response:** Winter ranges contained in the Big Creek drainage were identified as such and management goals and direction were provided during the formation of the Flathead Forest Plan in the early 1980's. Generally, such important land management designations involve coordination with Montana Department of Fish, Wildlife and Parks, who because their management priorities tend to have a good idea of ungulate wintering areas. Therefore, though the winter ranges contained in the Big Creek drainage tend to be relatively small areas, observations of deer and elk on the south facing hillsides designated as winter range do occur. Therefore, if these animals that do winter in the area are subjected to human-cause disturbance such as winter-logging, then it seems reasonable to conclude that wintering animals will tend to stay away from the disturbance source, which can be described as 'ineffective use of winter range.

**#222 Public Concern: The Flathead National Forest should design and implement conservation strategies for sensitive species and other species of concern.**

The Forest Service must follow through on its responsibility to design and implement conservation strategies for Sensitive species and other species of concern. Without having done so, as the Forest Service Manual requires, you cannot claim to be

implementing sound principles of ecosystem management, and you bear no hope of maintaining viable populations of all species as NFMA requires.

**Response:** The purpose of the EIS is to disclose effects on the environment from the proposed action and its alternatives; it is not to design conservation strategies for sensitive species. The analysis of effects on sensitive and other species of concern ends with a conclusion by the analyst whether the project would cause a population viability concern. Also see the response to comment #211.

**#223 Public Concern: The Final EIS should adequately analyze logging, road use, and disturbance effects on sensitive species.**

Extensive logging road use and disturbance could have effects on a number of sensitive species (including species that require remote habitat, aquatic and riparian species, and others). This is not adequately considered.

**Response:** The effects analysis on sensitive species determined that no loss of population viability would occur as a result of implementing the proposed action or alternatives. The associated activities of logging road use and disturbance were considered in the effects analysis. Refer to Chapter 3 of the FEIS and information contained in the Project File for more detailed information.

**#224 Public Concern: The Final EIS should justify the selection of Management Indicator Species.**

We request that you “Consider for selection (as MIS) all Sensitive species in the . . . project area” (FSM 2621.1(2)). This means not just taking for granted that those listed in the Forest Plan are the only appropriate MIS. Please document your selection of MIS, showing due consideration for all TES species. The biologist(s) should assure that the indicator species identified in the Forest Plan are in fact appropriate indicators of environmental changes in these areas for this type of project. For example, some indicator species improperly eliminated by amendment 21 may be necessary for gauging the impacts of this project on habitats in the burned and unburned portions of the project area. Or others may be needed.

**Response:** The Flathead Forest Plan includes all sensitive species in its list of Management Indicator Species. The DEIS (3-98) and FEIS discusses which species constitute management indicator species: all threatened and endangered, sensitive, and commonly hunted species. Amendment 21 replaced 3 species on the Forest MIS list, pileated woodpecker, marten and barred owl with the list of sensitive species (Forest Plan Amendment 21 Project Record, herein incorporated by reference). A review conducted by the Forest in 2000 indicated that the list of sensitive species were adequate to represent the array of habitats across the Flathead National Forest (project record Rs-20). A review of the determination for the Moose project reinforced that finding. The Moose Post-Fire proposal would not affect pileated woodpeckers through any changes in currently suitable habitat. It could have effects on future use of the area by pileated woodpeckers via changes in snag and downed wood habitats that would persist until green forests recover. The relationship is discussed in the FEIS. The FEIS and project records Rd-2 through Rd-8 provide a thorough analysis of current and future snag and downed wood habitat and potential effects to these important habitat elements. An analysis of pileated woodpecker viability at several spatial and temporal scales is presented for these species in project record Rg-5. Refer to Chapter 3 Wildlife section in the FEIS and the Project File for more information.

**#225 Public Concern: The Final EIS should quantitatively address habitat objectives, outputs, and effects for all Management Indicator Species.**

We specifically request that you “express habitat objectives, outputs, and effects in quantitative terms using Habitat Capability (and) Acres” [FSM 2623 (1 and 2)] for all Management Indicator Species. That is, each alternative analyzed should have separate quantified data based upon Forest Plan monitoring and site-specific surveys. It is an absolute necessity that thorough surveys for Proposed, Threatened, Endangered, and sensitive species and management indicator species be conducted before NEPA documents are finalized so that effects can be expressed in terms of populations and habitat acres, and the public can have an opportunity to comment on the adequacy of proposed mitigation. )

**Response:** Habitat objectives have not been established for all management indicator species (MIS). There are Forest Plan standards and guidelines that prescribe certain quantified objectives for some but not all MIS. For example, elk and mule deer winter ranges have an objective of maintaining 30% of the area as thermal cover; likewise, white-tailed deer winter ranges have an objective of maintaining 50% of the area as thermal cover. There are also quantified habitat objectives for grizzly bear and other MIS. If the analysis of effects on MIS showed a change in any of the baseline habitat objectives as a result of the proposed action or alternatives, they were displayed in the DEIS and reiterated in the FEIS. For example, habitat effectiveness values for elk summer ranges changed as a result of open road density reductions (DEIS 3-139). However, other habitat objectives such as thermal cover on winter ranges did not change because the Moose Fire essentially eliminated all thermal cover.

**#226 Public Concern: The Final EIS should disclose the results of monitoring habitat conditions, distribution, and populations of sensitive and Management Indicator Species.**

Please disclose in the analysis the results of monitoring of habitat conditions, distribution, and populations of Sensitive and other management indicator species in the Forest in response to Forest Plan requirements and as this relates to the proposed action.

**Response:** Past wildlife monitoring within the project area included surveys for barred/boreal owls and pileated woodpeckers; more recently winter track surveys for forest carnivores have occurred. Data from these surveys can be found in the project record Rg-3 and Rg-7. These species occur within “green” older aged forests and since the areas surveyed now have substantially changed conditions from the fire, the data are no longer useful for determining habitat suitability. Therefore, the results of these surveys are most useful in showing where some species occurrences were before the Moose Fire, and really cannot be incorporated into the analysis of the Most post-fire project because of the significantly changed condition. Habitat conditions and distribution of habitat are disclosed in the DEIS, FEIS and Project File. What population data exists was taken into account in the wildlife analysis that is disclosed in the EIS. Details are located in the Project File.

**#227 Public Concern: To protect Management Indicator Species and sensitive species dependent on old growth habitat, the Final EIS should disclose the number of acres of old growth in the analysis area and outline proposed activity impacts.**

The DEIS failed to disclose how many acres of old growth exist in the analysis area, or outline how the proposed activities will impact it. Many MIS and Sensitive species need habitat associated with old growth forests. These habitat characteristics include large dead trees, large live trees with defect or signs of decadences such as heart rot and decay, large contiguous areas with high canopy closure, and large pieces of down wood on the forest floor. Just as important, mature non-old growth and near old growth forest areas also provide many of these important habitat characteristics used by these species. In short, these species need forest habitat that is largely unaltered by human activities such as clear cutting, salvage logging, prescribed burning, firewood cutting, and road building.

**Response:** The DEIS (3-10 to 3-13) disclosed the amount of old growth (late seral/old forest) in the Big Creek drainage. Proposed activity impacts were also discussed in the DEIS (3-24). Also see the response to comments #17, #47, #87, #88, #89, #90, #91 and #92.

**#228 Public Concern: The Flathead National Forest should explain how Threatened and Endangered Species effects determinations were made without Biological Assessments.**

I asked to look at the Biological Assessments for Threatened and Endangered Species and was told that they were not completed; however, effects determinations for these species were made in the DEIS. How can the Flathead make effects determinations if the BAs if they are not finished during the comment period?

**Response:** The biological assessment (BA) is a document that the Forest Service sends to the Fish and Wildlife Service (FWS) for concurrence with determinations if a threatened and endangered species may be affected by a project. The content of the BA generally is no different than the content contained within the NEPA document. The

separate BA document is generally not created until a preferred alternative has been selected by the Responsible Official (Deciding Officer). The contents of the BA are extracted from the EA or EIS to create a stand-alone document that more readily facilitates FWS review. Therefore, the assumption that threatened and endangered species effects determinations can only be made in the BA is not correct.

**#229 Public Concern: The Flathead National Forest should not prescribe management activities which focus on bear or wolf population enhancement.**

It's about time we start using the public forests for something besides bears and wolves. Both have populations large enough to become a nuisance. Do not obliterate or close any more roads. Do allow for as much burned timber harvest as possible.

It's not about bear recovery. Bear populations in North Fork are stable or growing.

Closing roads for the bear is not a good plan, those bears have been here since day 1. There are more bears now than this country needs. Stop the road closure.

**Response:** Federal law mandates recovery of grizzly bear and gray wolf. Compliance with the Endangered Species Act is not discretionary or negotiable. The law cannot be changed by this project-specific decision. Only Congress can change or modify this law. Also see the response to comment #15.

**#230 Public Concern: The Final EIS should explain the assumption that goshawk habitat does not exist in the project area.**

The northern goshawk is a R-1 sensitive species. Proposed logging, road building and other disturbance associated with the project could affect goshawk nesting, post-fledging family habitat, alternative nesting, foraging, competitors, prey and potential habitat. The FS assumes that no goshawk habitat exists in the area, but fails to explain how it came to this conclusion.

**Response:** Since goshawks utilize green forests and are usually associated more with older mature forests, effects to goshawk are probable only if actions were to affect mature forest site conditions. Since harvest prescriptions would be targeting dead and often blackened trees; and those currently green trees that are likely to die from insect attack within two years, it is unlikely that the project actions would have a measurable effect on goshawk because goshawk would not use those trees. The DEIS (3-123) provided for the reader where the rationale for exclusion of the goshawk could be found (Project Record Rs-10).

**#231 Public Concern: The Final EIS should analyze the condition of wildlife corridors for all Management Indicator Species and Threatened and Endangered Species within and adjacent to the project area.**

NEPA requires the Forest Service to consider biological corridors. The standard for such a review is the same "hard look" NEPA requires of other environmental effects. We are requesting the Forest Service analyze the current status of wildlife corridors for all MIS and TES species, and effects of each of the alternatives on the linkages. That means that corridors within the analysis area, and linkages with areas adjacent to the analysis area need be examined, plus the value of the entire analysis area as part of a larger corridor within or between ecosystems.

The DEIS failed to analyze the role that this analysis area plays in habitat connectivity for wide-ranging species. Because of their wide ranges and low population densities, wolverine, elk and grizzly bear conservation and management requires a regional perspective. It is widely accepted and promoted by conservationists and agency officials that wildlife migration and connectivity is necessary for healthy populations of wide ranging animals. The Whitefish Range plays an important role in regional connectivity since it provides fairly secure habitat for wildlife from Glacier to move into. The Flathead NF's failure to analyze the role that this area plays in the region in terms of connectivity and the impacts that this timber sale will have on must be addressed.

**Response:** The concept of ‘wildlife corridors’ was not specifically addressed in the DEIS because it was assumed that it was understood that the post-fire landscape is not in a condition where it can effectively function as a corridor at this point in time. With the predominance of living vegetation being absent, especially coniferous forest types, it seemed practical to conclude that the Moose Fire burned area no longer functioned as a corridor and the proposed action or alternatives would have no bearing on this. Therefore, this was not considered as an issue. Certainly if green, living trees were being targeted for salvaging the concept of corridors would need to be addressed at some level.

**#232 Public Concern: The Final EIS should analyze the cumulative impacts of fragmenting interior forest canopy on migratory songbirds.**

Please consider the cumulative impacts on migratory songbirds due to further fragmentation of the interior forest canopy.

**Response:** The DEIS (3-98) and FEIS states: “Similarly, migratory songbird habitat is associated with intact mid-late seral forests, which only exist in isolated patches within the Moose burned area, and would not be affected by the proposed action.” None of the alternatives proposes salvage within stands that provide intact mid-late seral conditions.

**#233 Public Concern: The Final EIS should address impacts to species that depend upon vast areas that are inaccessible to people.**

Will the proposed activities impact species that depend upon vast areas which are relatively inaccessible to people? These include increasingly rare species such as the grizzly bear, gray wolf, caribou, wolverine, fisher, pine marten, lynx, goshawk, etc. Where are these remote areas in relation to the proposed activities? The analyses should fully discuss the impacts of making these animals more accessible to hunting and trapping, and displaced due to project activities.

**Response:** The task of the EIS is disclosure of effects from the proposed action and its alternatives on the environment. For wildlife, the analysis should ultimately determine whether impacts would occur and determine the extent of the effects. The DEIS and FEIS analyzed and displayed the effects of the proposed action and alternatives on wildlife species that have relatively large home ranges. Vulnerability to human caused mortality due to a lack of cover was also discussed in the wildlife analysis. The concepts of ‘vast’ and ‘remote’ areas were not specifically addressed in the analysis. Currently, the grizzly bear is the species that most represents the host of species that depend on ‘vast areas’ and for which there is a management strategy to ensure that enough vast/security area exists on the landscape. The DEIS (2-21, 2-27, 2-35, and 2-40) displays the proportion of each grizzly bear subunit that would be managed as a ‘vast’ or secure area, without motorized access during non-winter. It is also important to note that none of the alternatives propose to make any areas more accessible to people over the long term. To the contrary, all action alternatives would close and decommission many miles of road, making much of the fire area less accessible than pre-fire conditions.

**#234 Public Concern: To protect wildlife, the Flathead National Forest should not build roads, log, or burn in roadless areas.**

I am writing you as a concerned citizen to not build roads or log/burn in roadless areas. It is my feeling that this alters important habitat for wildlife that is slowly eroding in our country. Please leave areas untouched by humans! It is also my concern that if roads are built, that snowmobiles will then invade those areas. Even if signs are posted otherwise, are they truly enforced? Please reconsider or revise this project to not invade areas that have remained primarily unaltered—it is my feeling that these serve an important role in nature and provide for the well-being of the wildlife that live in that area.

**Response:** The DEIS displayed five different alternatives or ways to at least partially meet the ‘purpose and need’ for the Moose Post-fire Project. The Responsible Official (Decision Maker) may, after review of the environmental effects, decide to select an alternative that does not involve any management activities within roadless areas. No road construction is proposed, and much of the area has been open to snowmobile use for decades.

**#235 Public Concern: The Flathead National Forest should provide adequate wildlife security.**

The Moose DEIS proposes some measures, such as widening streamside protection zones, that would make timber salvage less damaging to Big Creek, a watershed already put at risk by past road building and logging. On the whole, however, the DEIS fails to fully recognize the urgent need for providing adequate wildlife security due to failures to provide it in the past and the increased need for it in light of decreased cover due to the Moose Fire.

**Response:** The DEIS and FEIS provide a range of alternatives with different opportunities to respond to the lack of forest cover (decreased security) by increasing wildlife security. The DEIS and FEIS also disclose the changes in wildlife hiding cover and effects to pertinent wildlife species based on post-fire habitat conditions (Chapter 3, Wildlife section). The Responsible Official (Decision Maker) has a variety of options from which to choose, along with sufficient information on environmental and social effects and trade-offs of the various options on which to make an informed decision.

**#236 Public Concern: The Flathead National Forest should only implement management activities that improve wildlife security.**

Activities in this area (other than those that improve wildlife security) should be foregone in order to avoid not meeting the three and seven rule (DEIS 3-103). There is no need to impact the grizzly further for a project with little merit.

**Response:** Please see the response to comment #235.

**#237 Public Concern: The Flathead National Forest should not implement management activities that focus on wildlife security.**

Knock it off! That is knock all road gates on public land down and haul away. Quit kelly-humping roads. Wildlife security is a farce; wildlife only live where there is animal food, an overgrown forest cluttered with underbrush and laying with windfalls six feet deep has very little animal food and consequently very few animals.

**Response:** Please see the responses to comments #15 and #235.

**#238 Public Concern: The Flathead National Forest should ensure proper road closure to provide wildlife security.**

We commend the team's efforts in addressing the urgent need to reduce road densities in the project area. Roads are the main cause of habitat fragmentation, and all efforts to reduce their presence on the landscape should be implemented. Road densities not only cause a reduction in security cover, but they also result in species displacement from otherwise vital habitat. "In 1993 the South Fork Grizzly Bear Study released results that showed adult females avoiding not only open but closed roads" (Upper Clearwater EMA). The proper closure of many of the roads in the project area are of eminent importance in securing safe wildlife passage.

Motorized access was recognized by the Forest Plan in 1986 as a major factor affecting grizzly bear habitat security and has been confirmed by research conducted in the Swan Mountains of Montana (Mace and Waller 1997, pages 64-73). The USF and WS in their Biological Opinion for Amendment 19 put forth Terms and Conditions with which the forest is required to comply. Of the two subunits, only Lower Big burned enough to make a significant difference between pre- and post-fire habitat conditions. This may suggest that the Lower Big subunit is in greater need of habitat security and could indicate priorities for implementing Amendment 19 motorized access objectives.

**Response:** The Flathead Forest is currently consulting with the U.S. Fish and Wildlife Service regarding grizzly bear security on both the Moose Post-Fire Project and the Forest Land and Resource Management Plan. We are aware of the studies referenced in the above comments, as is the Fish and Wildlife Service. Information from the

studies provided the basis for Amendment 19, and the conditions of the bear subunits is being considered in consultation efforts.

**#239 Public Concern: The Final EIS should include evidence that motorized traffic impacts wildlife.**

Please stop the closing down of our heritage. The impacts made on wildlife from motorized traffic are definitely non-existent.

I've seen sign of or sight of a Grizzly bear in that area. The minimal traffic that travels in that area is not harmful to grizzly bears in any way. Try and prove that it does. We are all part of this earth let us all use it.

Item 8. Motorized travel should be allowed after snow pack has accumulated. Non-primitive and non-semi-primitive areas should be accessible to motorized winter recreation. Grizzly bears will most likely relocate out of these areas. Motorized winter travel doesn't affect the bears anyway.

Please send pictures of dead grizzly bears that have been run over by snowmobiles.

**Response:** There is a whole body of scientific literature regarding motorized traffic and impacts on wildlife. While the Moose Post-fire Project's proposed alternative and 'action' alternatives respond primarily to recognized security needs of grizzly bears, other wildlife species (e.g. black bear, elk, deer, moose, wolverine, etc.) are expected to benefit as well. The habitat security needs of grizzly bear were firmly established by a 10-year grizzly bear study in the South Fork of the Flathead River (Swan Mountains), not too far south of the Moose Post-fire Project area. Therefore, the 'evidence that motorized traffic impacts wildlife' for this project is embedded in the South Fork grizzly bear study (Mace and Waller 1997).

This project does not address motorized access or travel during winter other than to disclose effects of current levels of winter motorized use to pertinent wildlife species in the project area. Winter motorized access is being addressed on a forest-wide basis in an ongoing project, the Winter Motorized Recreation Forest Plan Amendment, however.

**#240 Public Concern: The Flathead National Forest should keep Road 316 open for forest health, bull trout, cutthroat trout, and grizzly bears.**

The agenda to take our land away from us must come to an end now. This open road [Road 316] is absolutely necessary for forest health, bull trout redds and cutthroat and grizzly bear habitat. Let's not be duped.

**Response:** The DEIS provided a range of alternatives with at least one opportunity (alternatives 3) to re-open a portion of Road 316 that closed as a part of the decision to allow expansion of the Big Mountains Ski and Summer Resort. The portion of Road 316 that was closed to mitigate for expected habitat loss from the ski area expansion plans included the stretch of road from Canyon Creek (near the Trumble Creek road junction) to the 'four corners' junction. The Moose Post-fire Project, only under Alternative 3, would open only a portion of Road 316, from the 'four corners' junction to the Canyon Creek Big /Creek divide. The rest of the road system would be unaffected by the decision. The Responsible Official (Decision Maker) will, after review of the environmental effects, decide on an alternative that considers all environmental and social effects of the various alternatives.

**#241 Public Concern: The Flathead National Forest should consider the negative effects on wildlife habitat and biodiversity of both closed and open roads.**

In addition, the Forest Service must examine the effectiveness of its road closures, thereby fully considering the negative affects on wildlife habitat and biodiversity of both closed and open roads.

**Response:** The proposed action and alternatives for the Moose Post-fire Project each contain strategies for managing motorized access within the Big Creek drainage. Road closures and road decommissioning form the foundation of road management for the project. Although the basic impetus for road management is Amendment 19, which is specifically aimed at providing grizzly bear security, other environmental benefits such as water quality,

fish habitat, other wildlife security, and maintenance of habitat continuity/biological diversity will be inherent results of the motorized access management program of this project. The negative effects that certain roads and road densities have on wildlife habitat is discussed in the DEIS and FEIS. In some cases, open roads have produced permanent negative effects on wildlife habitat, and in some cases roads closed by gates are not fully effective.

**#242 Public Concern: The Final EIS should analyze snowmobile impacts to water quality, fisheries, and wildlife.**

We urge the Flathead to make road decommissioning its top priority in the Post-Fire Project and to conduct it in a manner that maximizes improvements to water quality, fisheries and wildlife security, rather than making for easier snowmobiling. The proposed Winter Recreation Agreement is a socially engineered proposal and its NEPA process has yet to look at the impacts to these other resources. The Moose DEIS and ROD must make an independent assessment of and decision on snowmobile access in the Big Creek area and cannot simply give way prematurely to the snowmobile access proposed in the Agreement.

**Response:** Road decommissioning is a high priority in the Post-Fire Project. Road decommissioning activities are designed to provide increased security for grizzly bear and other species, and reduce road-related sediment delivery and risk of road failure. Alternative 3 proposes a project-specific amendment that would allow ten stream-aligned culverts to remain in place while considering the roads on which they are located to be “reclaimed.” It is important to note that all ten of these culverts would be replaced with larger culverts or bottomless arches that are appropriately sized to accommodate 100-year flow events, thereby reducing the risk of road failure. We have also refined our monitoring and maintenance plan for insuring that these culverts remain in good working conditions (See the monitoring plan in the FEIS).

The need for retaining appropriately-sized culverts in these 10 locations is explained in the description of Alternative 3 in Chapter 2 of the DEIS and FEIS. The roads where these culverts are located are currently, and have always been open for snowmobile use. This use is allowable under current Forest Plan direction. These 10 culverts are located in steep incised streams where the lower end of the culvert is buried under up to 15 feet of fill. If the culverts are removed and stream channels reestablished as normally happens with road decommissioning, snowmobile passage across these streams would be precluded.

In 2002, a settlement agreement resolved a 2001 lawsuit regarding snowmobile access across the Forest. The settlement agreement identified the roads in question as open snowmobile routes that are the only access high-use snowmobile play areas. The settlement agreement also identified these play areas as “open to snowmobile use.” In the spring of 2002, temporary closure orders were signed that allowed identified routes and play areas to remain open, and closed the remainder of the Glacier View Ranger District to snowmobile use. These closure orders are to remain in place pending completion of a Forest Plan amendment, for which the settlement agreement is the Proposed Action. Scoping for the Winter Motorized Recreation Snowmobile Amendment occurred in August-September, 2002.

The scope of snowmobile-related decisions to be made in the Moose Post-Fire Assessment is limited to whether to adopt this project-specific Forest Plan amendment to allow these 10 culverts to remain in place. The suggested “independent assessment of and decision on snowmobile access in the Big Creek area” is not within the scope of the Moose Post-Fire Project, and is best addressed in the ongoing Winter Motorized Recreation Forest Plan Amendment.

Potential snowmobile impacts were considered as part of the environmental baseline and included as part of cumulative effects in the Moose DEIS and FEIS.

**#243 Public Concern: The Flathead National Forest should work with contractors to monitor winter-range use by wildlife and schedule winter logging activities to reduce wildlife impacts.**

High priority should be given to maintaining what remains of thermal cover on big game winter range. If beetle numbers remains relatively low, logging in winter range with thermal cover values should be excluded. Winter logging in important winter range should be avoided, but a blanket prohibition on winter logging seems unnecessary. Your staff should work with

contractors to monitor winter-range use by wildlife and schedule winter logging activities accordingly to reduce wildlife impacts.

**Response:** There is very little to no thermal cover left in the winter range areas. What live trees remain are prime targets for Douglas-fir bark beetles. In the FEIS, Alternative 4 would prohibit winter logging in order to reduce disturbance to wintering animals, while the Alternatives 2, 3 and 5 contain some areas of required winter logging, or choice of winter tractor or helicopter logging in order to reduce impacts to soils. The Responsible Official has several options from which to choose, as well as adequate information regarding environmental and social effects of these options to make an informed decision.

**#244 Public Concern: The Final EIS should ensure protection of wildlife habitat in logged areas.**

Take steps to retain critical forest cover for elk, wolf, wolverine, and grizzly bear in areas where logging is allowed.

**Response:** The DEIS recognized the lack of cover within the burned area and discussed the relevance to this situation to certain wildlife species such as elk, grizzly bear, wolf, and wolverine. However, the focus of the proposed action is to salvage dead and dying trees for bark beetle outbreak suppression and to help meet human demand for wood. ‘Green’ living trees and trees that are expected to remain alive will not be harvested. In the context that salvage logging will occur in the project area and considering that less than 10% of the project area will be actively managed, protection of wildlife habitat will occur over a majority of the area.

**#245 Public Concern: The Final EIS should analyze negative salvage logging impacts to wildlife habitat both structurally and functionally.**

The USDA report (2000) finds that the removal of dead trees associated with post-fire logging has the potential for significantly changing wildlife habitat both structurally, through removing existing and future snags and large woody material, and functionally, by means such as reducing populations of insect prey. For example, four recent individual studies found that post-fire logging reduced the abundance and nest density of cavity-nesting birds (USDA 2000). The majority of studies reviewed by USDA (2000) observed substantial adverse habitat impacts associated with post-fire logging. They note studies addressing the aspects of a post-fire forest that provide desirable habitat resources: Several authors point out that on a landscape scale, wildfire creates patches of highly attractive habitat for a distinct array of species (Hutto 1995). To maintain healthy metapopulations of these species over the landscape, post-fire patches should be managed with great care (Caton 1996, Hejl and McFadzen 1998, Hitchcox 1996, Saab and Dudley 1998).

**Response:** The DEIS (3-143 to 3-153) and FEIS provided a thorough analysis of snags and downed wood habitat and disclosed the impacts of the alternatives for the Moose Post-fire Project. Further information is contained in the Project File. It is also important to note that less than 10% of the project area is proposed for salvage harvest, and even less of the area affected by the Moose Fire.

**#246 Public Concern: The Flathead National Forest should consider salvage logging techniques that incorporate structural elements of burns to improve the suitability of logged forests for post-fire bird species.**

The DEIS needs to consider salvage logging techniques that incorporate structural elements of burns (e.g. retaining or creating high densities of snags and patches of live trees, and increasing the complexity of edges). These techniques may improve the suitability of logged forests for many post-fire bird species.

**Response:** The DEIS (3-143 to 3-153), FEIS and project records Rd-2 through Rd-8 provide a thorough analysis of snags and downed wood habitat. Additionally, Appendix B in the DEIS outlines prescriptions that incorporate structural elements of burns that will maintain suitability of salvage logged sites for post-fire birds. As noted in the DEIS (3-124) and FEIS, salvage logging can virtually eliminate the black-backed woodpecker from a stand, even when many of the fire-killed trees were retained. Effects on this species at several spatial and temporal scales were

addressed in the DEIS, FEIS, and project record Rg-5, which demonstrates above average mounts and adequate distribution of habitat for black backed woodpeckers at the 4<sup>th</sup> code, forest, and regional levels.

**#247 Public Concern: The Flathead National Forest should evaluate salvage logging impacts to cavity-nesting birds.**

USDA (2000) also note that habitat modification associated with salvage logging may particularly impact cavity nesting birds: In four recent independent studies conducted in the intermountain West, post-fire logging caused significant changes in abundance and nest density of cavity-nesting birds, although the effect differed somewhat by location (Caton 1996, Hejl and McFadzen 1998, Hitchcox 1996, Saab and Dudley 1998). Most cavity-nesters showed consistent patterns of decrease after logging, including the mountain bluebird and the black-backed, hairy, and three-toed woodpeckers; abundance of the Lewis' wood-pecker increased after logging.

**Response:** The DEIS (3-124 to 3-126 and 3-143 to 3-153), FEIS, and project record Rd-2 through Rd-8 and Rs-2 & Rs-3 provide a thorough analysis of snags/downed wood habitat and cavity nesting birds, and displayed potential impacts from the Moose Post-fire Project. Appendix B outlines prescriptions that will maintain suitability of salvage-logged sites for many species of birds that use post-fire habitats and the green forests that follow.

**#248 Public Concern: To protect habitat for species dependent on bark beetles, the Flathead National Forest should reconsider logging of all moderately high to high risk stands.**

All of the action alternatives leave very few moderately high to high risk stands untreated (DEIS 3-51 and 52). Large proportions of all areas with any kind of a Douglas fir or spruce beetle risk (except riparian areas for the latter) are to be logged under all the action alternatives (DEIS 3-55). So there may be inadequate habitat for species that depend on ecosystems with these kinds of outbreaks.

**Response:** Refer to the Vegetation section in Chapter 3 of the FEIS for a description of bark beetle potential, monitoring results, and the effects of the various alternatives. The intent of bark beetle-related treatments is to keep an existing infestation from expanding to epidemic proportions, and not to eliminate bark beetles from the area. The DEIS (3-124 to 3-126 and 3-143 to 3-153), the FEIS, and project records Rd-2 through Rd-8 and Rs-2 and Rs-3 discussed and analyzed the effect of reducing bark-beetle populations on species such as the black-backed woodpecker. In addition, at many spatial scales that are larger than the Moose Fire Area, bark beetle populations are already at epidemic levels (project record Rg-5).

**#249 Public Concern: To protect the Olive-sided Flycatcher and other species that rely on post-burn habitat, the Flathead National Forest should not salvage log.**

I began a study of one of these rare and declining species, the Olive-sided Flycatcher (*Contopus Cooperi*), this summer in an attempt to better understand what constitutes preferred habitat for this species and to determine if harvested forest provides suitable nesting habitat for this species which is otherwise limited to post-burn habitat in the Northern Rockies. As such, the size of the Moose Burn has provided an unprecedented opportunity to find this rare species in sufficient numbers to study. I have located 28 breeding pairs and several unpaired males, not all of which I have coordinates for at this time. The Olive-sided Flycatcher, like the Three-toed and Black-backed Woodpeckers are post-fire specialist species evolved to breed in burned forest. As such, fire suppression limits creation of new habitat for these species and salvage logging will degrade and most likely eliminate habitat for these species, even if some trees remain after standing dead trees are removed. It has almost certainly been a combination of fire suppression and removal of the standing dead trees that comprise their habitat which has placed these species on endangered species lists in this and other states. Montana is one of the only remaining places in the United States where these species can be found in abundance. As such, the people of this state, and those that manage its resources have a responsibility for maintaining population levels that are likely contributing to populations in neighboring states where populations are lower and are not self-sustaining. Not only will salvage logging eliminate these species, but the entire post-fire ecosystem including many species of plant and animal that are found nowhere else. I therefore recommend that "salvage logging" not be carried out by the Forest Service in the Moose Burn (Individual, Missoula, MT - #1194)

**Response:** As stated in the DEIS (3-144) and FEIS (3-\*\*\*), some species such as black-backed woodpeckers and olive-sided flycatchers appear to respond positively to the high densities of snags in burned forests and may depend on them. Effects of salvage of post-fire habitat with high densities of snags were addressed in the DEIS (3-124 to 3-126 and 3-143 to 3-153), FEIS (3-\*\*\*), and project records Rd-2 through Rd-8 and Rs-2 and Rs-3. An analysis of viability at several spatial and temporal scales is presented for these species in project record Rg-5, which demonstrates above-average amounts and adequate distribution of early post-fire habitat at the 4<sup>th</sup> code, Forest, and Regional levels.

**#250 Public Concern: To meet the needs of old growth associated species, the Flathead National Forest should not log old growth habitat.**

Alternatives 2, 3, and 5 do not maintain sufficient snag and downed wood for wildlife. All alternatives log in 30 acres of old growth habitat. Amendment 21 to the Forest Plan requires that vegetation treatments be modified to meet the needs of old growth-associated species. No logging should be done in old growth habitat.

**Response:** Please refer to the response to comments 87 through 91, and 94 through 98.

**#251 Public Concern: The Flathead National Forest should better select wildlife trees.**

Wildlife tree marking leaves much to be desired. Rotten and broken tops are the best wildlife trees. Several such trees at Mud Lake are not marked.

**Response:** Besides the criteria that you suggested as being the ‘best wildlife trees’ another criterion for marking trees was that they had to be within 200 feet of an open road. This distance criterion was used to try to protect them from firewood cutters. Additionally, firewood cutting snags/wildlife trees within 300 feet from a perennial water source (i.e. lake/pond or streams) is prohibited. Therefore, if the trees that you observed near Mud Lake were either further than 200 feet from an open road or within 300 feet of the lake, they would not have been marked.

**#252 Public Concern: The Final EIS should include a site-specific analysis of the long-term habitat needs of grizzly bears.**

F.W. Allendorf, R.B. Harris, and L.H. Metzgar [in “Estimation of effective population size of grizzly bears by computer simulation” (Proceedings, Fourth International Congress of Systematic and Evolutionary Biology, 1991)] showed that this National Forest, being historical range for the Grizzly Bear, is critical to the survival of a viable population. Their research reveals that a minimum viable population of grizzly bears is between 1,670-2,000 bears, much higher than previously thought. The land area required to support this number of bears, based on even the most conservative approach (e.g. extrapolating the highest known densities across all habitat types), over 15 million acres of undisturbed habitat is required; more than in all the identified recovery zones for bears. A more realistic figure is somewhere around 25 million acres. This means that all currently suitable habitat must be protected, and corridors linking the subpopulation areas must also be protected. We request that you perform a thorough site-specific analysis utilizing this “new information” for this proposed project. Furthermore, the Grizzly Bear is thus the major indicator of the health of the ecosystems in their ability to provide for all wide-ranging forest carnivores and other species dependent on large remote, unfragmented blocks of land.

**Response:** As a reminder, the task of the EIS is disclosure of effects from the proposed action and its alternatives on the environment; it is not to conduct ‘a site-specific analysis of the long-term needs of grizzly bears’. Certainly, grizzly bears are part of the environment and effects were displayed in the DEIS (3-99 to 3-109). However, the whole issue of minimum viable populations and what constitutes ‘recovery’ of the grizzly bear population is the task of the US Fish and Wildlife Service and has already been completed in the form of the ‘Grizzly Bear Recovery Plan’ (US Fish and Wildlife Service 1993). The EIS must disclose the significance of effects from the proposed action or alternatives. An effects determination ultimately leads to ‘adverse affect’, ‘not likely to adversely affect’ or ‘no effect’; in some cases ‘beneficial affect’ may be the determination. If an ‘adverse affect’ determination is made, then in accordance with the Endangered Species Act, formal consultation with the Fish and Wildlife Service (FWS) must occur and the FWS must determine whether the population of the species in question is being ‘jeopardized’. Therefore, your concern relative to minimum viable populations of grizzly bears cannot be determined at the scope

of the Moose Post-fire Project. Your concerns need to be expressed to the FWS and questions asked about whether the Grizzly Bear Recovery Plan needs to be updated to reflect the information that you have cited.

**#253 Public Concern: The Final EIS should disclose the amount of secure core area in each grizzly bear subunit.**

The DEIS does not disclose how much secure core area is in each of the grizzly bear subunits but each action alternative logs on several hundred acres of potential security core habitat in the Lower Big Subunit, and all action alternatives except alternative 4 log in potential security core habitat in the Werner Subunit. Compliance with the security core area standard in Forest Plan Amendment No.19 should be a priority in any proposed project.

(S-15) Whether Forest Plan standards related to grizzly bear would be met (18% ORD, 18% TRD, 68% Core.)? How this can be said with a straight face is incomprehensible, especially when Core has not yet been determined for these subunits. If it's not delineated how do you know that you have it and much less, are protecting it?

**Response:** The DEIS (2-21, 2-27, 2-35, & 2-40) and FEIS provide data on the existing and proposed situation, depending on alternative, relative to the amount of security core within the Lower Big and Werner Creeks grizzly bear subunits. The basic criteria for security core area are: habitat with no motorized access and further than 500 meters from an open or gated road/trail; and the area must be at least 2,500 acres in size. Graphic/mapped representation of security core areas for each alternative can be found in the Project Record (Exhibit Rt-7).

**#254 Public Concern: The Final EIS should clarify and expand Map 3-6 regarding bear subunits and Bear Management Areas.**

Twelve BMAs have been impacted by the Moose Fire (DEIS 3-99). What are the unmarked areas in the bear subunits? What bear subunits and BMAs exist outside of those shown (Map 3-6)?

**Response:** The Moose Fire did not impact twelve bear sub-units. The unmarked areas in the grizzly bear subunits shown in the DEIS (Map 3-6) does not indicate anything other than it is part of the each subunit. There are many other subunits and BMAs outside of the analysis area for this project that were not affected by the Moose Fire.

**#255 Public Concern: The Final EIS should provide additional quantitative information regarding Bear Management Areas.**

Table 3-35 should provide information on what the standards, guidelines, objectives and requirements are in a quantitative sense and what existing levels are in the BMAs in a quantitative sense.

**Response:** Table 3-35 in the DEIS and FEIS display the existing condition relative to standards and guidelines that are applicable at the BMA scale of analysis. The footnotes disclose what the quantified version of each guideline is. For example, 40% of each BMA that provides cover is the Forest Plan guideline. However, the opportunity to meet the guideline in some BMAs with this project is not possible because of the effects of the Moose fire.

**#256 Public Concern: The Flathead National Forest should ensure all potential project impacts to grizzly bear population viability have been investigated and understood.**

Hunting and Grizzly Bears: The DEIS states that “The proposed alternatives may make this an easier possibility, but to what degree is unknown. Therefore, considering that snags would be left for other wildlife and ecological reasons, the net result of the proposed sites being absent of most of the current level of dead standing trees would be that the risk of mortality may be increased but is not expected to adversely affect grizzly bears or habitat potential.” This statement just summarizes the concerns that we have with this proposed project—the Flathead National Forest just does not know how much worse the situation will become for grizzly bears. We firmly believe that the Flathead needs to have a firm grip on the impacts that this project will have on the viability of the grizzly bear populations before they move forward.

**Response:** The DEIS provided an analysis that discloses the effects that would be expected from implementation of the proposed action's alternatives. The determination of 'may effect – likely to adversely affect' the grizzly bear for each of the alternatives reflects the understanding that the Moose Post-fire Project will impact grizzly bears and habitat in the area. As a result, the Flathead National Forest is in 'formal consultation' with US Fish and Wildlife Service and it is the task of the US Fish and Wildlife Service to determine, based on the information provided to them, whether the viability of the grizzly bear population will be jeopardized. The determination of the US Fish and Wildlife Service on whether population viability by the Moose Post-fire Project will be documented in a Biological Opinion.

**#257 Public Concern: The Final EIS should analyze the extent to which wildfire harms grizzly bears.**

Wildlife—Threatened and Endangered Species—grizzly bear Page 3-99 to 3-109: A documented mortality of a grizzly bear was caused directly by fire. This raises an interesting question regarding the effects analysis and the No Action alternative: If no action is taken, not only would No Action result in a 'may effect—likely to adversely affect' the grizzly bear—due to no application of Amendment 19, but also a 'may effect—likely to adversely affect' the grizzly bear—due to the potential reburn of an untreated forest. It would also be interesting to estimate how many other animals died in the fire and how this affects future populations and viability of species that cannot "run away." (

At issue is the stated purpose and need to reduce future fire risk by reduction of future fuel accumulations. A sub-issue of this issue is the threat to grizzly bear habitat and to the bears themselves. It has been suggested that by not taking an active approach in addressing the fuel accumulations problem, the threat to the bears and their habitat is raised dramatically. The concern of many of us is the enormous threat fire poses for critters as was graphically noted in the death of a female grizzly bear. There did not appear to be a detailed discussion of the bears or other wildlife except to say that a variety of things "may" happen. If there is some scientific analysis to support these claims, I did not find it.

Leaving vast acreages of burnt stands untreated by this fire will guarantee a second significant fire within the same area to complete the process we casually describe as a "stand replacement fire." . . . In the short term, this habitat condition may provide security from disturbance but it seriously adds to the future risk of additional grizzlies being killed. . . . I did not locate any such discussion or consideration within the DEIS. It needs to be included. I believe that the current Amendment 19 of the Flathead Forest Plan may further complicate the issue of grizzlies. As I understand the analytical process to formulate this DEIS, several potential alternatives were not given much consideration whatsoever, when, on the surface, they conflicted with the amendment. Perhaps the EIS analysis as a response to the fire has shown that to reduce the risk of future takings of the grizzly, access may be required to reduce fuel loading, which conflicts with Amendment 19. These points appear not to have been considered within the DEIS, even with my effort to raise this issue during scoping.

**Response:** The potential for 're-burn' is speculative at best. There is no way to predict when the right conditions might come about again in the future. A fire could occur again in 5, 15, 50 or 250 years from now; there is no way of knowing with any degree of certainty. It would have been presumptuous for the effects analysis in the DEIS to have concluded that additional grizzly bear mortalities should be expected because there is a guarantee that a similar fire, with similar intensity will again occur. Fires are too dynamic to be able to predict with a high degree of certainty when, where and how they will burn. There are simply too many important influential variables that dictate fire behavior to be able to predict future potential of stand replacing fires. The DEIS (3-9) indicated that "...a majority of the area is in a lethal fire regime with an 80-240 year fire return interval." This being the case, 80 years into the future is a relatively long way out and to try to make predictions on what landscape forest patterns will be at that time seems a bit presumptuous. As an example, the use of prescribed burning (planned ignitions) has been on the increase over the last two decades and this is a management tool that can shape how and where wildfires occur and behave.

**#258 Public Concern: The Flathead National Forest should prioritize compliance with Amendment 19.**

Amendment 19 and Bears: The DEIS stated that "the status of these subunits relative to Amendment 19 is shown in Chapter 2. The five-year objectives were not met in either of the subunits; however, the Flathead National Forest is currently re-consulting

with FWS on the Forest Plan. Therefore, the existing condition (environmental baseline) of both of these subunits is that, neither is currently providing the level of habitat security specified in Amendment 19. The fact that the Flathead is not complying with Amendment 19 is upsetting. But even more upsetting is the approach that the Flathead is taking to this issue. The NF is presenting this as if it is numbers on a page, rather than an Amendment that was put in place to ensure the viability of grizzly bears is maintained in the area.

**Response:** The DEIS concluded that a ‘may effect – likely to adversely affect’ the grizzly bear would result under each of the alternatives, including the no action. This determination is heavily influenced by not meeting the ‘numbers’ specified by Amendment 19. A ‘likely to adversely affect’ determination is not a matter that is taken lightly by the Flathead National Forest because it that a ‘line’ of acceptable impacts has been crossed and if the ‘numbers’ of Amendment 19 are not adhered the proposed project may not proceed as envisioned. Therefore, compliance with Amendment 19 is a priority and will occur despite substantial local public opposition additional road closures and decommissioning.

**#259 Public Concern: The Flathead National Forest should disclose the efforts made to obtain temporary changes to Amendment 19 rules to improve post-fire bear habitat.**

The draft EIS in all alternatives except the “No Action” one requires from 56 to 87 miles of road to be decommissioned. I realize this work is being required under Forest Plan A19 rules; A19 rules concern requirements for Grizzly Bear Habitat. I do not find any discussion of the affect that the fire had on this habitat. I also did not find any recap of discussions that may have taken place with the U.S Fish and Wildlife Service regarding temporary changes to the A19 rules to allow for improving future bear habitat after the destruction that has occurred by the fire. What efforts were made to obtain temporary changes to these rules so the bear could be better served? )

**Response:** Temporary changes to Amendment 19 are proposed in Alternative 3 in the form of two project-specific Forest Plan amendments. Alternative 3 would re-open existing closed road (#316) in the Werner Creek grizzly bear subunit which would allow in higher levels of open road density and lower levels of security core area than without the amendments. In terms of fire effects to grizzly bear habitat, the DEIS (3-102) contained a discussion on post-fire habitat condition and use.

**#260 Public Concern: The Final EIS should describe impacts to grizzly bears from areas outside the project that do not meet Amendment 19 objectives.**

The FNF did not meet the A-19 five year objectives in this area (DEI S 3-101). What other parts of the FNF did not meet these objectives? How are grizzly populations impacted?

**Response:** There are other grizzly bear subunits across the Forest that do not meet the five-year objectives of Amendment 19. In the FEIS, we have expanded our analysis to include bear subunits surrounding the Moose Fire area. The FEIS and Project File contain information regarding the conditions of bear these subunits.

**#261 Public Concern: The Flathead National Forest should clarify how it will meet Amendment 19 10-year objectives.**

The action alternatives do not appropriately fulfill A-19 with respect to road management. The Amendment 19 requires a reclaimed road must be “treated in such a manner so as to no longer function as a road or trail.” . . . How would the project meet the 10-year objectives for grizzly bear management? Would it meet them in a timely recommend that the FS identify and choose an alternative that minimizes the effects on this threatened species.

**Response:** The DEIS (Summary -3, Summary -6 to 11, 1-9, 2-20 to 22, 2-28, 2-36, 2-41, 2-49 to 2-52) discussed how the Flathead National Forest would meet the objectives of Amendment 19. The FEIS reiterates this disclosure. The statement you quote from Amendment 19 applies to the non-denning period, when motorized use is prohibited on decommissioned roads and within security core areas.

**#262 Public Concern: The Flathead National Forest should comply with the management requirements of Management Situation 1 areas.**

The Moose Salvage Project is within the Northern Continental Divide Grizzly Bear Ecosystem (NCDE) and has been designated as Management Situation 1 (MS-1). A MS-1 area is identified as an area needed for the survival and recovery of the species, where management actions would favor the needs of the grizzly bear. . . . The Flathead National Forest has failed to place the grizzly bear as the highest management priority. The massive amount of salvage logging proposed will go directly against the needs of the grizzly bear. Specific Management Requirements: 1. Maintain adequate vegetative cover (across at least 50% of the forested landscape), and in patches large enough, to be effective. (across a minimum 4-8 sight distances). The Flathead National Forest is not going to be maintaining at least 50% of the forested landscape. . . . 2. Limit the size of logging openings (“clear-cut”) to 1.6 acres or less, and shaped such that nowhere within the openings is more than 150 feet from vegetative cover. The Flathead National Forest is going to be creating openings of all sizes, including some up to 200 acres. 3. Impose timing restrictions on entries into grizzly bear habitat (no more than one entry per decade, not to exceed three years in duration). Again, the Flathead National Forest has failed to consider this in the DEIS, even though you are blatantly out of compliance for this. . . . The addition of the proposed salvage logging will make this grizzly bear habitat totally unappealing to bears. The following statement from the DEIS clearly sums up the impacts that will result “Each of these alternatives (2, 4, 5) would salvage trees and make those parts of the landscape where trees would be removed more open. . . . Most of the proposed salvage sites do not meet hiding cover status, but the removal of dead standing trees would reduce the already limited cover in the short term (10-15 years), until forest regeneration provides hiding cover. Cumulatively, this would reduce the already limited amount of cover, however this mostly is true in the Lower Big subunit.” How can the Flathead be proposing such a project in a MS-1 area?

**Response:** The DEIS (3-99 to 109) provided an effects analysis and each of the alternatives produced a ‘may effect – likely to adversely affect’ determination for grizzly bear. This determination requires the Flathead National Forest (Forest) to enter into ‘formal consultation’ with the US fish and Wildlife Service (FWS). The result of ‘formal consultation’ is a ‘Biological Opinion’ (BO) from FWS to the Forest indicating whether the proposed project would ‘jeopardize’ the grizzly bear population. Additionally, the BO would indicate whether ‘taking’ was occurring and what adjustments/changes the Forest would need to make for the project to be compatible with grizzly bear habitat needs. The ‘adverse affect’ determination indicates that the environmental baseline (existing condition), the proposed project, or a combination of the two is in some way currently incompatible with grizzly bear habitat needs and may not be favoring the needs of the grizzly bear as is supposed to be the case in Management Situation 1 areas.

It is also important to note, in response to the comments above: (1) “Maintain adequate vegetative cover (across at least 50% of the forested landscape), and in patches large enough, to be effective” - the Moose Fire eliminated this opportunity; (2) “Limit the size of logging openings (“clear-cut”) to 1.6 acres or less, and shaped such that nowhere within the openings is more than 150 feet from vegetative cover” – We are now dealing with a post-fire environment where 43% of the area is now in a stand initiation phase, and opening sizes approach 10,000 acres. Post-fire salvage will have no effect on opening size; (3) “Impose timing restrictions on entries into grizzly bear habitat (no more than one entry per decade, not to exceed three years in duration)” – the salvage proposals described in the DEIS and FEIS would include 3 year sale contracts.

**#263 Public Concern: The Flathead National Forest should consider that the South Fork Grizzly Bear Study calls for road management, not road obliteration.**

It is time, long past time, to put a moratorium on road decommissioning. After reading the South Fork Grizzly Bear Study, used to validate Amendment 19, it called for road management, including seasonal closures, not road obliteration.

When will the questionable grizzly bear study be peer reviewed, so we can stop ripping roads and stopping access.

**Response:** Among the many interesting findings made by grizzly bear researchers in the ‘South Fork Grizzly Bear Study’ (formally documented as: Grizzly Bear Ecology in the Swan Mountains, Montana. Mace, R.D. and J.S. Waller. 1997. [see DEIS ‘References’ section] ) was what the composite home ranges of different age and sex classes of grizzly bears consisted of in terms of roaded and unroaded habitat. The Flathead National Forest (Forest) used that information and developed the motorized access objectives that are found in Amendment 19.

Based on a comparison of the existing condition of grizzly bear subunits with the motorized access objectives in Amendment 19, the Forest determined what it would take to meet the objectives. In most cases, the Forest found that additional road closures and road decommissioning needed to occur in order to provide the desired level of habitat security. Therefore, based on its understanding of what the 'South Fork Grizzly Study' (Study) found in terms of grizzly bear habitat security, it has been a Forest decision to 'obliterate' (decommission) roads, in order to meet its own obligations as per Amendment 19. Forest decisions to 'obliterate' roads have not been in response to what the Study 'called for', rather in response to what at this point in time the science of grizzly bear conservation has dictated. Road reclamation is a requirement of both the Flathead Forest Plan and the Biological Opinion issued by the U.S. Fish and Wildlife Service. It is not discretionary.

**#264 Public Concern: The Flathead National Forest should consider that the South Fork Grizzly Bear Study is not the best available science.**

The South Fork study was based on a small sampling of 50 grizzlies. The U.S. Geological Survey's (Kate Kendall) DNA study offers much more conclusive and reliable grizzly numbers. The 1995 DN for A-19 states that there should "be a continuous process of evaluation regarding monitoring results, research and implementation experience." The S.F. Grizzly Bear Study is no longer the best available science. Consultation with U.S. Fish & Wildlife Service should be reinitiated immediately based on preliminary DNA data. Road decommissioning needs to be put on hold until that consultation takes place and separated from the Moose Fire salvage.

**Response:** The South Fork study provided a 10-year profile of grizzly bear behavior and habitat use in the Swan Mountains of Montana; it provided valuable findings and understandings of grizzly bears. The 'Kendall' DNA study provided valuable data on population size at one point in time, and is not yet sufficient to determine population trends. Both studies have been important contributions to the knowledge base of grizzly bears in the Northern Continental Divide Ecosystem. They should both be considered best available science, however, they each have provided different kinds insight and information on grizzly bears. The Flathead Forest reinitiated consultation with U.S. Fish and Wildlife Service some time ago. The results of the Kendall study will be brought into our current consultation process. In the mean time, the existing Forest Plan standards and Terms and Conditions of the existing Biological Opinion remain intact.

**#265 Public Concern: The Flathead National Forest should consider alternatives to road closures or decommissioning to ensure grizzly bear security.**

I oppose the closure of Road 316. I use 316 to access huckleberry patches and as a "close in" getaway spot. If grizzly bear security is the reason for the closure I suggest you limit the thousands of tourist on Big Mountain ski slopes in the summer. The expansion of huge homes also seems counterproductive to maintaining bear habitat. If you close the back side of Big Mountain to vehicles in the summer and snowmobilers in the winter, close the front side to hikers-riders in the summer and skiers on the back side in the winter.

Access for future timber management, Page 3-20, 3-21: We concur that the implementation of Alternative 2 will affect the reasonable and economical access to 4,785 acres of forest for the purpose of resource management. Other action alternatives that include road reclamation have similar effects. In particular, the implementation of Alternative 4 will result in 13,480 acres without road access. This is a significant effect upon the human environment. We suggest that a better method of providing grizzly bear security is implemented that does not require the dismantling of a perfectly useable transportation system. These findings in your analysis further support our position on this issue.

I would like to see the road closure program go back to the level of August 2001. I would like to see a more "balanced" system of gating based more on the "Final Report: Grizzly Bear Ecology in the Swan Mountains Montana" completed in 1997.

**Response:** Refer to the response to comment #264.

**#266 Public Concern: The Flathead National Forest should close Road 316 seasonally to adequately regenerate grizzly bear security cover.**

Finally, given the severity of the burn along Lower Big Creek Road (#316), and the acknowledged lack of security cover for grizzlies, we strongly encourage the Forest to implement a seasonal closure on this section from April 1 - July 15, when most bears will have moved to higher elevations. It would be prudent to retain this seasonal closure until adequate security cover has regenerated—perhaps 10 years.

**Response:** The Responsible Official (Decision Maker) will take this into account when making her decision.

**#267 Public Concern: The Flathead National Forest should decommission roads as necessary to reduce sedimentation in the Big Creek watershed and to protect grizzly bear habitat and security needs.**

It may also be reasonable to allow some roads that are proposed for decommissioning or more severe access restrictions in Alternative 4 to remain seasonally open to make the selected alternative more acceptable to the public, although EPA does support obliteration or decommissioning of the roads that are sources of sediment to Big Creek and its tributaries, and that are necessary for grizzly bear habitat and security needs.

**Response:** The alternatives proposed in the DEIS and FEIS provide options for the Responsible Official to consider, and the results of the effects analysis disclosed in the EIS provide adequate information on which to base an informed decision.

**#268 Public Concern: The Flathead National Forest should focus more on grizzly bear habitat management than on grizzly bear security.**

There is a strong focus on grizzly security, and the affect that the fire had on it, in particular during hunting season. My opinion may not be in vogue currently, but for habitat managers to be so strongly focused on bear security ignores the relevant issue that future grizzly security is by far, more a sociological issue of man's behavior than it is habitat. The Forest Service role is not to focus on prevention of human poaching, rather on habitat management. It is indeed troubling that the Draft EIS declined to respond to my 30 January 2002 scoping comments wherein I challenged this project team to determine if the Forest can nurture and protect the habitat in the future for species. In detail, I stated my expectation that the USFS and USFWS need to balance a current "may affect" against the guarantee of a "future take" from a secondary re-burn of a stand of unsalvaged burnt timber.

**Response:** Refer to the responses to comments #263 and 264.

Providing an adequate level of grizzly bear security is an important aspect of habitat management. There is a reason why grizzly bears in the lower United States only exist in small fractions of their former range throughout the west; and where they do exist, it tends to coincide with a relatively high level of security. In particular, on the strength of protected areas such as the Bob Marshall Wilderness complex, Glacier National Park, Swan and Whitefish Mountain ranges grizzly bears continue to persist in the Rocky Mountains of Montana. Therefore, the indicators point to a need for relatively large tracts of protected/secure habitat in order to guarantee persistence of grizzly bears into the future. The Moose Post-fire Project DEIS provided different alternative motorized access restrictions, which manages Management Situation 1 grizzly bear habitat for increased levels of security.

**#269 Public Concern: To protect grizzly bears, the Final EIS should preclude salvage logging.**

We agree with the statement in the DEIS that "Habitat availability and security would be improved over a period of approximately seven years by each of these alternatives on the strength of additional motorized access restrictions." But this is not enough. The salvage logging in this project area is going to have such long-term ramifications for bears. We believe that the Flathead National Forest has clearly made their opinion known by determining that the implementation of these alternatives would yield determination of "may effect—likely to adversely affect" the grizzly bear yet still proposing to move forward with it. We strongly urge you to drop the salvage logging components of this project.

**Response:** The determination of ‘adverse affect’ on grizzly bears was mostly rooted in the existing condition and the amount of human activities that would occur (DEIS 3-109). In the grizzly bear effects analysis (DEIS 3-103, 104) there was no indication that salvage logging would have ‘long term ramifications’ for grizzly bears. Rather, the DEIS (3-104) stated that: “However, given that the maximum number of acres to be treated represents less than 10% of the burned portion of the Moose Fire on National Forest land, this should not be significant. Additionally, the important riparian areas, which contain large diameter standing and downed trees, would be left intact and available.” These findings are reiterated in the FEIS. The Forest is in ‘formal consultation’ with the US Fish and Wildlife Service to determine how best to proceed with the proposed project, given the ‘adverse affect’ determination.

**#270 Public Concern: To protect grizzly bears, the Final EIS should include winter logging.**

Because the project was not defined to specifically exclude non-winter logging, there is a good chance that grizzlies could be further impacted by permitted non-winter logging (DEIS 3-104).

**Response:** There are trade-offs to winter logging and to logging during non-winter months that are disclosed in the FEIS. The Responsible Official has several options from which to choose and adequate information with which to weigh the effects and trade-offs of the options and make an informed decision.

**#271 Public Concern: The Final EIS should include a full impact analysis and appropriate mitigation measures for black bear hunting impacts on grizzly bears.**

Black bear hunting could adversely affect grizzlies (DEIS 3-103). The full impacts of black bear hunting on grizzlies should be disclosed in the analysis and appropriate mitigation measures should be adapted.

**Response:** An ‘impact analysis and appropriate mitigation measures for black bear hunting impacts on grizzly bears’ is not within the scope of the Moose Post-fire Project. Spring black bear hunting regulation is the responsibility of Montana Department of Fish, Wildlife and Parks, and was considered in the cumulative effects discussion (DEIS 3-108).

**#272 Public Concern: The Final EIS should discuss whether grizzly bear activities will have a negative effect on beetle pheromone trapping.**

On Page 2-104 there is a brief discussion about the proposed beetle pheromone trapping and how it would have no negative effects on grizzly bears. Do you know if bears are not attracted to traps? If they are, this could be a real flaw in the sole reliance upon these traps in the riparian areas for spruce beetle control. Having directly experienced what grizzly bears do to gas jugs and other man-made articles, we could expect some curiosity for and subsequent destruction of these beetle traps. (Wood Products Industry/Association, Kalispell, MT - #1200)

**Response:** Disturbance of traps by bears has not been a widespread problem, but the potential is there. In the experience of the Forest Service Region 1 entomologist Ken Gibson, perhaps 1 year out of 3 a bear may disturb one of the trap clusters. It is not known whether this is an attraction to the beetles that can pile up within the trap, or just to normal curiosity. Weekly monitoring and emptying of the traps would be done as a matter of course, and this should reduce the potential problem. This disclosure will be added to the beetle effects analysis in the FEIS.

**#273 Public Concern: The Final EIS should provide additional analysis of impacts to gray wolves.**

What are analysis units for gray wolves based on (DEIS 3-110)? What is this based upon? Why does the FS include additional portions of other watersheds for wolf analysis when it does not include these for grizzlies, vegetation or other resources? Wolves select landscapes closer to roads as the DEIS claims (DEIS 3-110)? What is the basis for this? Low ungulate carrying capacities in the area have a minimal impact on wolves in addition to logging road use (DEIS 3-113)? What is the basis for this?

How does the fact that there has only been one “attempt” at denning in this area lead the FS to believe that past FS management practices are not detrimental to the wolf (DEIS 3-114)?

**Response:** The DEIS provided an analysis of expected effects/impacts from the proposed action and alternatives for Moose Post-fire Project. The effects analysis units utilized areas that coincided with watershed boundaries, which also coincided with established grizzly bear subunits. Since there are no formally established analysis units for gray wolf habitat effects analyses, two grizzly bear subunits were selected for direct/indirect effects and a third (State Cyclone subunit) was included for cumulative effects for the following reasons: 1) they contained ungulate winter and summer ranges; 2) they were large enough to be able to assess existing levels of habitat security at a size scale that reasonably represent the relatively large areas that wolves use throughout the year; and 3) the subunits were established boundaries in GIS data layers that could efficiently be used to assess habitat security as influenced by roads. One of the main challenges that natural resource professionals are confronted with when beginning an effects analysis from a proposed project is selecting the analysis area. Of necessity, analysis areas more often than not are going to be different for different resources.

The PhD dissertation: dispersal, genetic relationships and landscape use by colonizing wolves in the Central Rockies (Boyd-Heger 1997), a study of wolves in the North Fork of the Flathead river drainage (which the proposed project is contained in), was used to ascertain attributes of wolf habitat selection. The DEIS (3-113) stated that “...because of the existing relatively low ungulate carrying capacity of the Moose fire affected area, wolf use is also expected to be low.” The basis for this is if there is no prey base (ungulates) in an area, wolf presence should not be expected; i.e. if there is no food for an organism then it will eventually die. Similarly, if there is only a little bit of food for an organism in an area, then that organism should not be expected to use that area very much. The DEIS (3-114) states that: “Past forest management activities within the Big Creek drainage have apparently not been detrimental to wolf recovery, as evidenced by at least one successful denning attempt that produced pups.” The suggestion here is that wolves have colonized and assimilated the Big Creek drainage in the context of a managed forest. The fact that the Whitefish Pack denned within the project area indicated to the wildlife biologist that some level of habitat suitability was present. The current burned condition of the project area, however, may make the area less suitable for a few years until ungulate populations bounce back.

**#274 Public Concern: The Flathead National Forest should address the impacts of removing large trees from bald eagle habitat.**

Bald eagles nest 10 miles away (DEIS 3-115&116). We are concerned that there is a potential for the project to remove large dbh trees near the N. Fk. of the Flathead and impact bald eagles.

**Response:** The DEIS (3-116) states: “Considering the relatively small proportion that the three salvage treatment sites represent when considering the corridor as a whole within the Moose fire area, perch or potential trees should not be a limiting factor. Other tree species such as cottonwood and larch remaining within the proposed units would still be available to meet the needs of eagles.” The proposed treatment was considered benign enough for a determination of ‘no effect’ to be rendered for the bald eagle from the proposed project.

**#275 Public Concern: To maintain lynx habitat and connectivity, the Final EIS should map potential denning and foraging habitats and connectivity within and between Lynx Analysis Units.**

The DEIS states that the Upper Big Creek LAU (Lynx Analysis Unit) has 16% unsuitable lynx habitat due to the fire so 84% of this LAU has suitable lynx habitat. Conservation Measures in the Lynx Conservation Assessment and Strategy Project Planning standards require lynx habitat be mapped within each LAU with identification of potential denning habitat, foraging habitat and topographic features that may be important for lynx movement; and habitat connectivity within and between LAUs be maintained. There is no map of potential denning or foraging habitat and connectivity within and between LAUs. Without this information now can the Flathead determine whether lynx habitat and connectivity is maintained?

The analysis does not show where important lynx habitat components such as denning habitat, suitable habitat, and travel corridors are in relationship to proposed activities.

**Response:** The DEIS (3-122) stated, "...harvest prescriptions would affect at most (Alternative 2) 16 percent of temporarily unsuitable (burned) lynx habitat acres." What this means is that neither foraging or denning or any other kind of suitable habitat would be affected by the proposed action. Lynx habitat has been mapped within each LAU and can be found in the Project Record (Rt-18); this map displays suitable/unsuitable habitat. The proposed action and alternatives would only salvage within unsuitable lynx habitat and no denning, foraging, travel, or connectivity habitat would be affected. However, these habitat components have been mapped and can be found in the Project Record (Rt-22).

**#276 Public Concern: The Final EIS should include an expanded impacts and cumulative effects analysis for lynx.**

Please identify how the restrictions to lynx movement and migration resulting from cumulative impacts of past, present and future activities will hinder lynx from finding suitable habitat when displaced from the analysis area due to the projects associated with this proposal.

The DEIS should have adequately addressed the lynx and lynx habitat. The FS should conduct all analysis, management requirements and mapping requirements according to the provisions in the LCAS. The FS should have analyzed cumulative effects. The FNF should consult with the USFWS regarding this project's impacts on the lynx. The FNF should amend its forest plan to effectively protect the lynx prior to approving the potentially detrimental management activities proposed in this EA. Impacts resulting from winter and non-winter motorized use and lynx competitor's should have been considered in the EA. Even if the stands are non-lynx habitat, the potential for lynx to use the area as a migration corridor should have been assessed. Why was the analysis area limited to the area described in the DEIS? Merely considering Lynx Analysis Units as the only areas to be considered for effects on lynx does not make sense because of the connectivity issues. The assumptions of the LCAS regarding limiting lynx to certain elevations is another reason to question the LCAS. For example, since snowshoe hares (main prey species for lynx) are often at highest densities in dense young conifer stands several years after fires, it makes no sense to leave those areas out of the analysis. Another example is the LCAS Standard that requires "management actions will not change more than 15% of lynx habitat to an unsuitable condition within a ten-year period." The lynx doesn't care if it's logging or fire that makes habitat unsuitable—in fact, the FS often considers fire to have essentially the same effects as logging for habitat purposes. The DEIS does not adequately consider the fact that logging will further push back the development of conifer regeneration. This also has implications for delaying lynx foraging stands, as well as biological conditions that may provide habitat for other species. What affect has past and current logging and PCT activities had on lynx habitat? Does the project maintain suitable patches of denning habitat (DEIS 3-122)?

**Response:** The cumulative effects discussion on lynx (DEIS 3-122 to 123) considered the important past and present actions that have affected lynx habitat potential and these past activities were then considered along with the proposed action and alternatives with a conclusion of 'may effect – not likely to adversely affect' lynx. The two LAUs chosen for the effects analysis contained all of the proposed management activities and this was why they were selected for the analysis; other LAUs would be unaffected by this project. The US Fish and Wildlife Service will be reviewing the effects analysis and will determine if they agree with the determination. Also, please refer to the response to comment #275.

**#277 Public Concern: The Flathead National Forest should comply with Lynx Conservation Agreement and Strategy project-specific and forest-wide standards and guidelines.**

The Forest Service's programmatic Biological Assessment, the U.S. Fish Wildlife Service's subsequent Biological Opinion, and the Canada Lynx Conservation Agreement adopt the Lynx Conservation Agreement and Strategy (LCAS) as essentially part of each Forest Plan within the range of the lynx. The LCAS includes many forest wide standards and guidelines with which the FNF must be in compliance before projects are approved. The LCAS also includes several project-specific standards and guidelines, which the FNF must also comply with when performing NEPA analyses.

**Response:** Upon review of the standards contained in the LCAS and comparing them to the proposed action, it appears as though lynx habitat components (forage, denning, travel/movement) were not mapped. The proportion of suitable and unsuitable habitat in each lynx analysis unit was mapped (Project Record Rt-18), however not the actual components of lynx suitable habitat. This was an oversight that resulted from the knowledge that neither of

these habitat components would be affected by the project. Lynx habitat components have been mapped and can be found in the Project Record (Rt-22). The effects analysis remained the same. Also please refer to the response to comment #275.

**#278 Public Concern: The Final EIS should clarify how proposed project activities will not constitute a “taking” of lynx habitat.**

Please explain how the acres associated with this project of potential lynx habitat affected by this project does not constitute a taking of habitat under the Endangered Species Act.

**Response:** Please see the responses to comments #275-277. The effects analysis considered the proposed action and alternatives along with the environmental baseline, which considers past habitat modifications, and rendered a determination of ‘not likely to adversely affect’ lynx.

**#279 Public Concern: The Final EIS should explain the determination that all cutting units are unsuitable for lynx.**

How is it documented that all cutting units are unsuitable for lynx (DEIS S-17)?

**Response:** The DEIS (3-18 to 119) discussed described habitat characteristics that are suitable for lynx. The main criterion for habitat suitability is a living forest where lynx den, forage, and travel. The existing conditions of proposed treatment sites do not meet the habitat suitability criterion, therefore, the sites are temporarily unsuitable until regeneration of the next forest is sufficient to provide hare-hunting habitat.

**#280 Public Concern: The Final EIS should discuss snowmobile impacts to lynx populations.**

The DEIS does not discuss the implications that the present snowmobile use has for lynx populations.

**Response:** The DEIS (3-122 to 123) discussed the probable impacts that snowmobile use of roads may be having on lynx. However, the proposed project would not facilitate an increase in groomed snowmobile trails, and therefore meets the LCAS.

**#281 Public Concern: The Final EIS should adequately address the salvage logging impacts to various woodpecker species in all Vegetation Response Unit types.**

Forest stand conditions resulting from stand-replacing fires in all forest types (e.g. ponderosa pine), provide “source habitats” for woodpecker species, such as Lewis Woodpeckers, in the northern Rockies (V. Saab, pers. comm.). The DEIS offered a very basic discussion for these species in VRU 4 (lodge pole pine). However, the DEIS did not adequately assess how salvage logging would impact these species in all VRU types, especially in light of their current population declines due to habitat loss and/or alteration.

**Response:** The DEIS (3-124 to 126 and 3-143 to 153) provided a discussion of the environmental baseline and an effects analysis that addressed the habitat needs of various woodpecker species. Where proposed treatments would occur, impacts from salvage logging were estimated. Snag habitat quality was modeled and mapped across the Moose Fire area. Refer to the Wildlife Section in Chapter 3 of the FEIS and the Project File for further information.

**#282 Public Concern: The Flathead National Forest should revise snag management guidelines to include current research on woodpecker habitat.**

Since the publication of Thomas and others (1979), new research suggests that to fully meet the needs of wildlife, additional snags and habitat are required for foraging, denning, nesting, and roosting. Although we do not suggest specific numbers or snags to retain by forest type, two recent studies indicate that viable woodpecker populations occurred in areas with about four

snags per acre. We suggest that the next step in snag management should involve creating a model that incorporates the new information on woodpecker foraging substrates (live trees, snags, and logs), home range sizes, number and characteristics of roost trees, multiple occupancy of snags, and needs for other habitat structures. Once this information is incorporated, the model may suggest changes to guidelines that specify numbers of snags and other habitat features by forest type and geographic area. Additional information on fall rates of snags, foraging needs of black-backed and three-toed woodpeckers, relation of the density of woodpeckers to that of secondary cavity nesters, and relation of snag density to woodpecker density would greatly improve the model. There is a similar lack of scientifically sound management guidance in the Flathead National Forest.

**Response:** The DEIS (3-124 to 3-126 and 3-143 to 3-153), FEIS (3-\*\*\*), and project records Rd-2 through Rd-8 provide a thorough analysis of existing conditions and potential effects on snags and downed wood habitat. Densities of snags to be left in salvage units as well as across Forest Service land in the Moose Fire area were derived by an analysis of species' needs (project record Rd-2), current conditions (project record Rd-3), and analysis done for Amendment 21 to the Forest Plan. Snag retention in all harvest units would meet or exceed standards in Amendment 21.

**#283 Public Concern: The Flathead National Forest should implement actions that maintain black-backed woodpecker viability.**

The DEIS does a great job of summarizing the impacts that this project will have on the sensitive species Black-backed woodpecker. “Salvage harvest in potential black-backed woodpecker habitat (Table 3-37) would virtually eliminate black-backed woodpeckers from the salvage unit areas, even though many of the fire-killed trees would be retained (Hejl and McFadzen 2000). . . .” Yet, there is no modification of activity due to this statement above. The Flathead National Forest is failing to maintain viability for this post-fire dependent species.

We are concerned that salvage in potential black-backed woodpecker habitat would virtually eliminate black-backed woodpeckers from the salvage unit area (page 3-125). We note that Alternative 4 would appear to cause lesser levels of black-backed woodpecker habitat loss than the other action alternatives (Table 3-37).

**Response:** While black-backed woodpecker habitat use would virtually be eliminated within salvage treatment sites (DEIS 3-124 to 3-125; FEIS; and project records Rs-2 and Rs-3), the overall effect would not lead to a trend toward Federal listing (DEIS 3-132, FEIS ). A Forest and Region-wide assessment that was added for the FEIS (project record Rg-5) also concludes that black-backed woodpecker habitat is not in short supply, even with implementation of the action alternatives on Moose. This assessment demonstrates above-average amounts and adequate distribution for black-backed woodpeckers at the 4<sup>th</sup> code, Forest, and Regional levels.

**#284 Public Concern: The Final EIS should explain mitigation measures for black-backed woodpecker habitat loss.**

The action alternatives reduce between 31 and 44% of black backed woodpecker habitat compared to existing conditions (DEIS S-17). How will the FS mitigate these serious declines in habitat?

**Response:** While the DEIS does disclose these expected declines, the FEIS has revised these expected declines in response to changes in the salvage acres since the DEIS. The declines in available black-backed woodpecker habitat would range from 24% to 34% (project record Rs-3). However, as displayed in the DEIS (3-132) and FEIS, the overall effect would not lead to a trend toward Federal listing. A Forest and Region-wide assessment that was added for the FEIS (project record Rg-5) also concludes that black-backed woodpecker habitat is not in short supply at several scales, even with implementation of the action alternatives on Moose

**#285 Public Concern: The Final EIS should analyze cumulative impacts on the viability of wolverine populations.**

We are quite concerned about the impact that this project is going to have on the viability of the wolverine. The DEIS implies that there will be minimal impacts to wolverine due to the salvage logging. There was minimal discussion as the cumulative

impacts of the fire, the state logging projects and this project. We are very concerned about the future of this wolverine population. Research conducted by Hornocker and Hash in 1981 found that “No wolverines were located in clear cuts of any size; however, tracks were observed crossing clear-cut areas 15 times. Wolverines were located within 1 to 3 km of clear cuts and active roads 12 times. Male wolverines were found farther from active roads, clear cuts, and burns than females.” (1292) “Wolverines appear reluctant to cross openings of any size such as recent clear cuts or burns. Tracking revealed that wolverines meandered through timber types, hunting and investigating, but made straight-line movements across large openings. Tracks further indicated they often ran or loped across such openings.” (1298-1299) The cumulative impacts from the fire and the logging will essentially create large openings that wolverines have been shown to avoid. How is this proposal going to maintain the viability of the wolverine population?

**Response:** Cumulative impacts (effects) were evaluated and documented in the DEIS (3-131) and reiterated in the FEIS. It was determined that “...each of the alternatives may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.” Natal denning habitat is considered to be a key for determining long-term viability for this species. NO natal denning habitat occurs within the Moose Fire area (FEIS). A larger scale assessment conducted for the FEIS found over 22,000 acres of natal denning habitat for wolverine occur in the in the North Fork of the Flathead, with protected from disturbance in wilderness and parks (Project Record Rg-5). On the Flathead National Forest, over 53,000 acres of natal denning habitat exists, with about 70% protected from disturbance in wilderness. In Region 1, nearly 375,000 acres of natal denning habitat exists with over 69% protected in wilderness and parks. This would indicate that natal denning habitat for wolverine is well distributed, and a vast majority located in areas that receive little human disturbance.

**#286 Public Concern: The Final EIS should analyze how the proposed logging will impact hunter opportunity and all elk habitat components.**

Elk wintering habitat and other key elk habitat components could be affected by this project (DEIS-Wildlife and Map 3-9). The FS fails to analyze how the proposed logging impacts all elk habitat components. We ask that you thoroughly evaluate the impacts of the proposed timber sale on hunter opportunity, including age and sex ratios of hunted species.

**Response:** The DEIS (3-137 to 139) disclosed the effects on elk habitat components in winter and summer ranges as well as the project’s effects on potential elk vulnerability during the hunting season. It is not possible to evaluate the impact of the proposed timber sale on age and sex ratios of hunted species because there are several variables that dictate hunter harvest that are unrelated to logging. For example, a relatively dry fall with a light snow-pack can keep animals in the high country, making them relatively inaccessible to hunters. In this case, age and sex ratios would have no relationship to the proposed timber sale. The current regulations (i.e. either sex, bucks only, etc.) also influence what the resulting age and sex ratios will be, and this unrelated to the proposed timber sale. The DEIS (3-139) and the FEIS discuss the high hunter harvest of mule deer bucks and bulls as an expected result of the salvage logging if early snow events push animals to lower elevations sooner than normal. This would be influenced by the proposed salvage of trees because of the removal of the hiding cover value of standing dead trees. However, it is not possible to predict with any certainty what the response of deer and elk will be and therefore even more difficult to predict what the effect might/could be on age and sex ratios.

**#287 Public Concern: The Flathead National Forest should prioritize winter range needs of elk and deer.**

Issue 7. “The proposed salvage treatments and road management may result in ineffective use of winter range areas by elk and deer.” True. Thus give first consideration to winter range needs of elk and deer. (Individual, Palmyra, IL - #29)

**Response:** The FEIS and Project File contain information regarding the environmental effects of the various alternatives on big game animals. The Responsible Official has adequate information from which to make an informed decision.

**#288 Public Concern: The Flathead National Forest should recognize the habitat role of dead, diseased, and dying trees in the forest.**

The FS seems to fail to understand that dead, diseased, dying, etc. trees have a role in the forest—they are not “opportunities” for logging, or if it does understand this, the entire purpose and need for this project runs counter to this understanding. In fact, the DEIS is contradictory and puzzling in this respect. Since your proposal effectively maligns these habitat components of wildlife, perhaps it is time you stepped back to see how previous management actions have affected them. Please disclose the amounts of snags, recruitment snags, and down woody debris previous logging operations have left in old cutting units, so that the public can tell if you’ve met Forest Plan Standards in those units. Please perform surveys to determine the amounts of snag habitat and down woody debris exist in unmanaged areas for comparison. The statement that “only” dead trees will be removed discounts the fact that dead trees and snags are important habitat components, especially in late seral or OG stands.

**Response:** An entire affected environment and effects analysis on snags and downed wood can be found in the DEIS (3-143 to 153) and in the FEIS. Including adjustments to prescriptions within salvage units and marking of high quality snags within 200 feet of open roads (to protect them from firewood cutting) is an indication that the Flathead National Forest recognizes the habitat role of dead, diseased, and dying trees in the forest.

**#289 Public Concern: The Flathead National Forest should implement scientifically sound snag habitat retention requirements.**

As this proposal includes the “salvage” of dead and dying trees we urge that scientifically sound snag retention requirements be employed within this project area. We ask that you affirmatively respond to this “new scientific information” in the amount of snags and green tree replacements designated. This is required by NEPA, where at 40 CFR [section] 1502.24 it states: Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. Thorough field surveys for snag and downed woody material in the project area and in the cumulative effects area should have been completed for this DEIS, since it is quite possible that excess snags in this proposal area are needed to offset the lack of such habitat in areas previously logged.

What is the basis in Alternative 2, 3 and 5 of allowing only retention of larch over 18 inches in diameter for snag habitat (page 2-9)? Are there other tree species such as Ponderosa pine and trees as small as 14 inches in diameter that should be retained as snag habitat? We note that 14 inches is identified as a threshold diameter used in the Appendix post-fire morality guidelines (page B-5). Why is 14 inches used as a threshold diameter in Appendix B, but 18 inches is used as the threshold for retention of large larch?

Page 3-148: We suggest you modify the planned snag retention plan to allow the removal of some merchantable western larch > 18” (here specified as DBH) and the removal of merchantable trees felled for safety reasons. We believe these issues are driven by your political concerns with no basis for the actual effects upon the human environment as required by NEPA. Scientific standards should be used to determine the appropriate number of snags and downed wood habitat that should remain within timber salvage harvest units. Your proposed design criteria for snags and downed wood habitat for all the Action Alternatives is arbitrary and capricious and needs to be modified to reflect the scientific need for these forest structures through time.

**Response:** The DEIS and FEIS used the best available science on snag habitat. The discussion on the affected environment in the DEIS (3-143 to 146) and FEIS provided an overview of the project and entire 71,000 acre Moose Fire area relative to this important ecological component. The focus on the larger diameter classes for retention purposes is in response to the concept that larger snags can accommodate more cavity nesters than can smaller diameter snags. Given that less than 13% of the burned area (DEIS 3-145) was determined to have high quality snag habitat, it was appropriate to focus in on retaining reasonable representation of larger diameter snags in the analysis area, especially since over 42% contained small diameter low quality habitat.

**#290 Public Concern: The Final EIS should explicate downed wood and snag habitat retention guidelines and associated fire risk and resource concerns.**

Adequate downed wood and snag levels may not be maintained. OSHA guidelines may weaken snag guidelines (See DEIS 2-9). According to the DEIS, in most units all unmerchantable material would be left in the unit (DEIS 2-9). Wouldn't this create a fire hazard in logged units? How would it be determined what situations pose fire risks and other resource concerns? Would logging slash and dry, open conditions still create fire risks in units not treated for slash reduction?

**Response:** The DEIS (3-84 to 95) and FEIS provided a description of the existing condition of the affected environment and an effects analysis for each alternative. The prescriptions for snags and downed wood retention were considered during the effects analysis. Also refer to the responses to comments #288 – 290.

## Soils

### **#291 Public Concern: The Final EIS should analyze specific impacts to soil stability and productivity across the project area.**

No activity is permitted in areas where soil stability or productivity will be adversely impacted by project activities, without a site-specific forest plan amendment. Impacts to soils should be thoroughly analyzed across the project area. Consideration of soil stability and regeneration capacity should include: (1) Are there any areas of unstable soils which could result in mass movement, and will any proposed activities occur in these areas or soil types? The soil types in the project area should be disclosed and management areas unsuited for timber harvest with sensitive soils eliminated from ground disturbing activities. (2) How much soil compaction and surface erosion has occurred in the proposal area because of past actions, and what will the likely erosion increases be for the alternatives proposed? (3) What has been the actual effectiveness of proposed BMPs in preventing sediment from reaching watercourses? (4) What BMP failures have been noted for past projects with similar land types? A serious evaluation should also be made of the cumulative impact to fine soil's A-horizon in the analysis area including how long it will take before those soils will sustain the life and processes that existed before they endured logging activities. This needs to be fully disclosed in your decision document for this proposed sale. Disclose the areas of unstable and highly erosive soils which would result in mass movement and erosion, include maps that show all land and soil types in the NEPA document. . . . Analyze whether any steep slopes, areas with equipment limitations, landslide prone soils, soils with a volcanic ash layer, and other sensitive soils exist in the project area. Consider the degree to which this project would impact soil productivity. Consider the degree to which areas with detrimental soil conditions exist or are foreseeable in the project area project could increase detrimental soil conditions. Please analyze the soil types in the area, disclose the erosion potential of the soil types, and map the results in the analysis document.

**Response:** The DEIS analyzes the specific impacts to soil stability and soil productivity on pages 3-154 through 3-175. The FEIS will do likewise.

### **#292 Public Concern: The Final EIS should address tree removal impacts to the microclimate.**

We are concerned removal of standing trees would change soil moisture and temperature by changing microclimate through reducing shading and wind interception and future down woody material. These microclimate changes could slow decomposition. Further, the soil disruption and compaction could slow decomposition through disrupting microbial communities.

**Response:** See the FEIS for a discussion of this concept.

### **#293 Public Concern: The Flathead National Forest should reconsider logging and burning treatment impacts to soil nutrients.**

(3-191) "Locally, a study was done to measure the effects of logging and then prescribed fire on the soils in the Miller Creek area of the FNF. . . . It would take 50 forest rotations, using similar logging and burning treatment at the end of each rotation, to fully deplete even the available sodium supply in the surface foot through man-caused disturbances. This assumes that these effects are a one time thing once logging has occurred. The erosion process can continue for several years after a harvest entry. This is an interesting itemization considering that NW forests are said to be potassium deficient. (

**Response:** The total loss of nutrients mentioned in the study represented a four-year cumulative total, thus it considered the continued erosion following the first year of disturbance. In addition, we predict that the erosion control features used on the proposed Moose Post-Fire Project would be effective and would reduce soil erosion better than the measures installed in the Miller Creek study, if any were even installed.

### **#294 Public Concern: The Flathead National Forest should consider the use of less disturbing logging methods on moderately burned soils.**

Thank you for including Map 3-10 (page 3-157) that identifies areas with moderate and high soil burn severity. We are pleased that Table 3-56 (page 3-164) shows that ground based yarding is not proposed on high burn severity soils. Table 3-56 does show ground based yarding on moderate burn severity soils (from 329 acres with Alternative 4 to 459 acres with Alternatives 2 and 5). Would it be more appropriate to use less disturbing logging methods on moderately burned soils (e.g., helicopter, skyline or winter logging)? (U.S. Environmental Protection Agency, Helena, MT - #262)

**Response:** Several units with moderate burn intensity were changed from ground-based logging to either helicopter or ground based in winter in the FEIS. These changes were in response to field surveys that indicated a lack of fine woody debris needed for slash mats on skid trails. The remaining ground based yarding will meet the soil quality standards by using various design features spelled out in Chapter 2.

**#295 Public Concern: The Final EIS should adequately analyze road-building, landing, and skidding impacts on soil erosion.**

The impacts of building roads, landings and skidding on erosion were not adequately analyzed for the fragile soils of the project area. Studies of post-fire logging suggest the potential for post-fire logging to increase erosion. The thinning of green trees will eliminate the soil stability provided by green trees in the fragile post-fire ecosystem. In addition, the removal of standing dead and downed trees will further destabilize an already unstable environment. Every tree that is left on a burned site plays an important role in mitigating future erosion—logging destroys nature's ability to assist in post-fire recovery. As trees die and fall they provide stability and erosion control over the landscape. Is it the position of the FNF that logging will have no effect on erosion?

Although post-fire logging has some potential for reducing overland flow through the placement of logging debris, the USDA report (2000) concludes that salvage logging will most likely "have no effect or produce more sediment than that produced by the fire." The authors cite several studies that find that "post-fire logging associated with road building, conducted with ground-based log retrieval systems, or undertaken in stands having steep slopes and sensitive soils likely will have the greatest potential for exacerbating the erosion problems typically observed in burned watersheds." The potential for the destabilization of soils associated with logging related ground disturbance, road construction, and the removal of partially-live trees should be thoroughly reviewed in the planning process for this project. The potential for detrimental compaction of the sensitive post-fire soils caused by mechanical means of removing logs must be considered.

**Response:** The effect of the proposed action on soil erosion is discussed in the soil section on pages 3-166, 3-167 of the FEIS and in the Hydrology section under Environmental Consequences of Sediment Yield Effects for all the proposed activities. The erosion from the proposed salvage is expected to be minor, partially due to the amount of debris left on the site and partially because of the design features of all the alternatives found in DEIS Chapter 2, page 2-11 and 2-12, and the FEIS. The potential for compaction is discussed on DEIS pages 3-164 through 3-172, as direct and indirect effects and as cumulative effects.

**#296 Public Concern: The Final EIS should analyze post-fire stability and erosion potential of roads in the project area.**

Post-fire forests are extremely susceptible to erosion. While roads have extremely detrimental impacts on unburned forests (through changing water flow patterns, increasing erosion, and influencing wildlife habitat and migration), their impacts are greatly intensified on burned landscapes. Your analysis must carefully consider the post-fire stability of roads in the project area. Any roads with high erosion potential must be considered for obliteration.

**Response:** Anywhere from 56 to 87 miles of roads are proposed for decommissioning. Most of these roads lack BMPs, which makes them high risk for erosion and subsequent sediment. Most of the roads are on soils formed in glacial till, which are the soils with a high risk of erosion.

**#297 Public Concern: The Final EIS should clarify the relationship between vegetation fire severities and soil burn severities.**

It is shown in Table 3-29 (page 3-87) that 45% of the Moose fire area burned severely (i.e., 16,024 acres) with another 19% moderately burned (6,580 acres). Table 3-53 (page 3-155), shows soil burn severity had only 1% rated as high (856 acres) and 38% rated as moderately burned (25,037 acres). Obviously fire severity (evaluating effects on vegetation) is different from burn severity classes as described on page 3-155. The high, moderate low soil burn severity classes are described on page 3-155. The high, moderate low fire area or vegetation fire severity classes described on pages 3-6 and 3-7. It is surprising that the Moose fire burned 45% of the area with high fire severity yet only 1% of the soils are considered to have high burn severity. Is it common for fire severities for vegetation and burn severities for soils to display such markedly different magnitudes?

**Response:** It is common for fire severity for vegetation and burn severity for soils to have marked differences in magnitude. High severity fires show their effect on the crowns of trees, burning off all needles and most branches. These fires often have minor effect on soil conditions because most of the heat is up in the crowns, not on the ground. The soil surface and duff remain relatively cool and tend to have moderate or slight burn intensity. A smoldering ground fire that does not get up into the crowns can have the highest impact on soils.

**#298 Public Concern: The Final EIS should provide scientific, quantitative analysis of potential soil productivity impacts.**

In order to maintain the productivity of the soil, Forest Service Handbook section FSM 2500-99-1 has been adopted by the Northern Region. . . . These are quantitative, not qualitative, numeric standards that call for quantitative analysis, based upon scientific measurements. The agency should present hard, scientific data to analyze these potential impacts, or document that the costs of obtaining such data is exorbitant. Analysis should be premised upon research methods generally accepted in the scientific community. . . . Application of Forest Plan Standards for soil protections requires direct, on-the-ground surveys in areas affected by previous management activities in order to provide numerical percentages of existing detrimentally disturbed Activity Areas. Without taking this step, decisions resulting in any soil impacts will be made lacking the cumulative effects analysis that NEPA requires. . . . An adequate cumulative effects analysis must also consider the cumulative effects of logging on the soils. Cattle tend to graze in areas that have been disturbed by logging and road building. . . . Activity Areas can also be impacted by motorized vehicle use, including 4-wheel drive vehicles, machines designed for off-road use (ORVs), and even snowmobiles, which have been shown to impacts soils. The DEIS fails to evaluate the cumulative detrimental soil disturbance from these factors. Please disclose the quantitative results of monitoring of detrimental soil conditions following post-fire logging. Please disclose whether or not you've ever adequately monitored each of the cutting units on your Ranger District and in this project area.

**Response:** Project record exhibit N-21 contains the results of extensive field monitoring done to determine the existing condition of proposed units that have had previous management activities. No cattle allotments are in the soil analysis area so this is not applicable and was not addressed. Any soils effects from off road vehicle use would have been detected in the monitoring of existing condition for this project – none was found

**#299 Public Concern: The Final EIS should clarify how the "detrimental soil disturbance" in burned areas will be determined.**

Do the Regional 15% soil quality standards that limit soil impacts to no more than 15% detrimental soil conditions (page 3-158) include consideration of the prior detrimental soil impacts resulting from the wildfire when the overall 15% cumulative soil [are] impacts determined? For example, if the fire caused 10% detrimental soil disturbance in a harvest unit, would the soil quality standard then limit any additional harvest caused disturbance to 5% so that cumulatively it did not exceed the 15% Regional standard? Additional information or explanation regarding measurement of "detrimental soil disturbance" in burned areas would be useful to better explain how this soil standard is implemented in the field.

**Response:** The detrimental soil disturbance includes burn severity. No proposed units were identified within severe burn severity. Proposed activities are all within areas with slight or moderate burn severity and these burned areas are not detrimentally disturbed by definition in the R-1 Supplement 2500-99-1 on soil management. Within slight or moderate burn severity ratings there may be some isolated severe burn areas too small to map. The effect of these small places on soils are minor. If detrimental disturbances in a given proposed unit add up to 5 percent, we can manage the area with the intent of keeping the final total detrimental soil disturbance less than 15 percent.

However, if we surpass the 15 percent, then we must do restoration that begins returning the soils back to productive condition with the intent of having less than was originally in the unit (see FEIS).

**#300 Public Concern: The Final EIS should analyze impacts to soil from major storm events in the harvest area.**

The use of "normal precipitation events" (p.3-185) does not sufficiently capture potential impacts from unusual precipitation events that are not rain on snow events. The presumption that major storm events would cause significant erosion is not analyzed sufficiently elsewhere in the document. Similarly, it is not clear that climatic data from Big Fork is sufficiently comparable to the harvest area. Big Fork is located at the north end of a large lake and seems likely to have different weather than the harvest area. The Forest Service should analyze and discuss how this could impact model input data or other features in the DEIS. Similarly, was the WEPP model run for all differing areas in the proposed action areas?

**Response:** The results of the WEPP model analysis of the post-fire erosion potential gives a report of potential erosion from a 30-year, 15-year, 6-year, 3-year, and 1.5-year return period storm. At the same time, it averages the erosion from a 1-year, 2-year, 3-year, etc., etc. return period storm up to a 30- year return interval. Therefore, the average is reflecting both the frequent 1-year return events as well as the infrequent 30-year return event. We reported the 30-average potential erosion to reflect not the worst case scenario, nor the best case scenario; but what could be reasonably be expected to occur within the first 2 to 3 years following the fire. The WEPP soil erosion potential results for each landtype for each return period storm are in the project record exhibit Q-10. So far the post-fire erosion estimate has been an over-estimate of what has occurred, based upon observations by the hydrologist and fisheries biologist

As discussed in another response in the hydrology section, the Bigfork NOAA weather station data was used because it is the longest-term local weather station that best reflects a higher precipitation zone associated with the mountainous foothills, as compared to the Glacier National Airport @ Kalispell which reflects a valley bottom climate. The WEPP model (using the Bigfork climate data) was used because it provides the best relative erosion/sedimentation potential estimates between the post-fire condition and the various proposed activities (e.g. ground skidding versus helicopter yarding) in the five alternatives. As discussed in the Hydrology section of the FEIS, computer models are a tool for comparing different situations using the best available data, but are not tools that can develop an absolutely correct answer of what will happen.

The WEPP erosion model was run for all of the various landtypes (landform/soil conditions) in the Moose Fire area.

**#301 Public Concern: The Flathead National Forest should use slash and other debris to dissipate surface flow on skid trails in burned areas.**

Page 2-11: It may not be a good idea to require that: "All skid trails would have water bars installed." Personal observation of recent fire salvage operations reveals that skid trail water bars can lead to increased rill and gully erosion when employed as an erosion control technique on burned areas. This is because there is a deficiency of understory vegetation to accept concentrated surface flow at the outlet of constructed water bars. We recommend the use of slash and other debris to dissipate surface flow in skid trails in burned areas to break up skid trail surface flow and thus ameliorate rill and gully erosion.

**Response:** Chapter 2 of the FEIS states that all skid trails would use water bars and slash as an erosion control measure. The actual use of either or both would be up to the discretion of the sale administrator. He may choose to ask the soil scientist for assistance if necessary.

**#302 Public Concern: The Flathead National Forest should consider natural variability and unique post-fire needs in coarse woody debris retention guidelines for severely burned soils.**

The DEIS presents 30 tons per acres of coarse woody debris as an optimal balance between soil productivity and ecosystem integrity and fuel mid fire considerations. However, the figure fails to address natural variability and the unique post-fire needs of the forests. We are concerned that the figure was based upon Graham et al. (1994) coarse woody debris retention guidelines

that were not developed considering the needs of severely burned soils. Given the need for coarse woody debris to contribute nutrients to soils from which nutrients have been highly volatilized, the failure to consider appropriate retention for severely burned soils is a serious deficiency.

**Response:** The figure of 30 tons per acre has been removed from the FEIS as a “trigger point”, i.e. the point at which some form of fuels treatment would be considered. Slash/downed wood amounts will be highly variable among units, and slash treatments would be refined when more information is known about proportion of unmerchantable material (which can increase depending upon how long harvest is delayed). Upon completion of logging operations, all units would be individually evaluated for slash conditions, potential concerns, and site-specific treatment needs. Factors that might influence the decision on whether to treat slash or not include slash size, slash continuity, unit location in relation to surrounding forest, and existing or potential conifer regeneration. Refer to Chapter 2 in FEIS, and the Soils section in Chapter 3 for treatments and guidelines regarding slash treatment.

**#303 Public Concern: To reduce the risk of soil erosion and mass failure, the Flathead National Forest should reestablish vegetative ground cover quickly.**

Rain-on-snow precipitation events can result in significant runoff events that lead to erosion and mass failure. The loss of vegetation and ground cover by a wildfire along with increased post-fire water yield and peak flows followed by a rain-on-snow event could result in significant erosion and mass failure. We agree with the discussion of such events on page 3-192 that the risks and adverse effects of rain-on-snow events are aggravated by wildfire and post-fire ground disturbing activities. Quick reestablishment of vegetative ground cover on disturbed ground should be a priority.

**Response:** We agree with this statement. The BAER team following the fire prescribed seeding to revegetate sites with high burn severity that were at the highest risk of soil erosion. The fire area was monitored this summer (2002) for the need to do additional seeding, and the conclusion was that it was not necessary.

**#304 Public Concern: The Final EIS should identify actions that will be taken to aid the recovery of heavily impacted soils.**

The FS claims it will aid in the recovery of soils that are above 15% detrimental soil condition if logging will take place in them? What attributes of detrimental soil conditions will you do this for? How will you ensure that soils recover to the degree anticipated?

**Response:** We would restore soils that were compacted. As a result of doing this, vegetation will return to the site and organic matter will increase. As the trees, shrubs and grasses grow soil compaction will be further restored. Restoring soils would utilize ripping and vegetation. This does not immediately restore soils to their original condition, but it does begin the process and make strides toward the goal of having productive soils.

**#305 Public Concern: The Final EIS should clarify timber sale contract components designed to protect soil stability and productivity.**

What do you mean by equipment with a proven capability to be light on the land (DEIS 2-11)? How is it determined what an acceptable level of dryness is (DEIS 2-11)? How thick a mat will be required for skid roads and skid trails (DEIS 2-11)? How evenly distributed? How effective will this be? How much snow is "enough" (DEIS 2-11)? How frozen is "enough"?

**Response:** Ground based equipment that is light on the land would include excavators and log forwarders. Dry soils are determined using the hand squeeze method. If the soils do not form a sturdy clump or ball when it is squeezed then it is at the proper moisture level to put equipment on the ground.

A slash mat would be thick enough to prevent deformation of the soil surface by the equipment tracks or wheels. In other words, no tracks would be visible in the soil. The depth of the slash mat would vary with the type of material available for the slash mat.

The requirement for snow is similar. There needs to be enough snow so muddy water does not get mixed into or bleed into the snow where equipment operates. This depth also varies with the snow conditions. It takes more dry powder snow than wet dense snow to protect the soil surface. Soils must be frozen enough to prevent deformation of the soil surface where equipment operates.

## Hydrology

### **#306 Public Concern: The Final EIS should explain the assumption that watersheds are gradually improving.**

What is the FS's basis for assuming that watersheds are gradually improving (DEIS 3-179)? Lower watersheds are often the last to recover since sediment moves through them through time.

**Response:** There is a combination of anecdotal observations and quantitative measurements that are the basis for that interpretation. First, there is significantly less bare ground that is a potential sediment source in the headwaters area of Big Creek now than during the 1970's and 1980's. There is also significantly less channel erosion occurring now than in the late 1970's and early 1980's as observed by the district hydrologist. In addition, the McNeil Core data show a trend of decreasing in-channel fine sediments from the high point in 1990 to the present (Table 3-64, page 3-181 of the DEIS).

### **#307 Public Concern: The Flathead National Forest should explain proposed activities in the Draft EIS that conflict with current activities.**

(S-6) Alt 2. "Stream aligned culverts would be removed on decommissioned roads; methods such as half pipe culverts would be used to provide access over these areas." This option is already being eliminated from this and all alternatives by current USFS action at Skookoleel Creek and possibly other areas (M. Drago conversation 7/17/02).

**Response:** The decommissioning work on the Skookoleel Road system is not completed yet and will not be completed until 2005. If the project-specific Forest Plan Amendment that is described in Alternative 3 is adopted, there would likely be approximately 7 culverts or other similar structures left in place on this road system (after they are upsized to accommodate 100-year flows). If the project-specific amendment is not adopted, all stream-aligned culverts would be removed.

### **#308 Public Concern: The Final EIS should identify quantitative changes in stream temperature under each alternative.**

What quantitative changes in stream temperature will occur under the alternatives (DEIS S-19)?

**Response:** The EIS identified no increase in water temperatures caused by the proposed activities in any of the alternatives. The only proposed activity that could possibly affect water temperature is the removal of culverts during road decommissioning activities. Because of the very small short-term reduction of streamside vegetation caused by culvert removal process there is a reduction in streamside shading; however, due to the minor amount of shading vegetation that is affected there should be no measurable increases in water temperature associated with this project.

### **#309 Public Concern: The Flathead National Forest should adopt a variety of salvage logging techniques to study their stream impacts.**

Log the Moose Fire in different ways to learn more about where and how logging can best be used along streams. (Individual, Coram, MT - #218)

**Response:** We cooperated with the Rocky Mountain Research Station and the University of Montana, Forestry Department in identifying any potential salvage logging/scientific erosion study sites. The Rocky Mountain Station

did not find any site that would meet their criteria for a research site. The University of Montana will do some limited soil erosion studies associated with the Moose Post-Fire Project if an action alternative is chosen. There will be some post-salvage soils, watershed, and fisheries monitoring associated with the post-fire salvage (see Appendix E). The information for this work will accomplish a portion of your stated desire.

**#310 Public Concern: The Flathead National Forest should prevent salvage logging damage to intermittent stream courses on Glacier View Mountain.**

Salvage stand on Glacier View Mountain (Demers ridge) should be conducted in such a way as to preclude damage to intermittent stream course on the south and southwest flank of this mountain. I prefer Alternative 4's representation of this salvage operation. (Individual, Bigfork, MT - #1231)

**Response:** Under Alternatives 2, 3 & 5 the INFISH standards would be used to determine the appropriate exclusion zone for any salvage harvest next to any intermittent/ephemeral stream channels. INFISH standards include wider buffer zones than the Montana Streamside Management Zone Law. Under Alternative 4 the exclusion zone would be wider. Under any of the alternatives, there should be no direct physical impact to these intermittent/ephemeral stream courses.

**#311 Public Concern: The Flathead National Forest should not log in the Coal Creek or Big Creek drainages.**

I am writing to strongly urge the Forest Service to not allow logging in the Big Creek and Coal Creek Drainages. These creeks are bull trout spawning areas and degradation of the water quality, which would surely happen with logging, will effect the trout's livelihood, not to mention the effect forest removal would have on many terrestrial species—wolf, elk, grizzly to mention a few.

There should be no logging in the riparian corridors of Big Creek and Coal Creek, with a possible outcome of further erosion.

**Response:** There is not any salvage logging proposed in the Coal Creek watershed or in the “riparian corridors” of Big Creek. The vast majority of the proposed salvage in Big Creek is below the spawning areas. The units proposed in the various alternatives that are above the spawning reach were designed to minimize the risk of sedimentation to the spawning reach. These design features include using helicopter yarding of steeper slopes, only ground based yarding of the nearly flat sites, and having a significant buffer zone between any cutting unit and the stream channel of Big Creek. The fisheries section of the FEIS discusses the potential impact to bull trout of salvage activities, and concludes that the harvest proposed poses little risk to bull trout and other aquatic species.

**#312 Public Concern: The Flathead National Forest should look for opportunities to rehabilitate roads and to repair other sources of sediment.**

Road surface drainage, and the sagging of road ditches into channels and creeks, continues to be one of the most common BMP violations we have on this forest (FNF). Roads designed in the past, the very ones we are trying to obliterate now, were designed without current BMP philosophy in mind so it is not surprising. For the roads we no longer actively use, our dwindling road maintenance budget will make it difficult to maintain the culvert crossings. When these fail during storm and runoff events, tremendous amounts of sediment can be delivered directly to the channel and from there down into lower streams with significant beneficial uses such as sensitive fish habitat. It is important to note that culverts can fail if not maintained even on roads that have become so brushed in that travel is difficult. It is imperative that both open road densities and total road densities be examined as to the potential effects they will have upon water quality as well as wildlife habitat. Furthermore, Johnson indicates that peak flow water yields caused by roads are far higher than generally acknowledged in environmental analyses. Please look for opportunities to perform road rehabilitation work and to repair other sediment sources caused by past management activities in the cumulative effects analysis area. :

**Response:** All of the action alternatives have significant mileage of road decommissioning proposed (55 to 87 miles). These proposals would have the desired effect described in the comment. In addition, another

environmental document (Big Creek BMP Improvement decision memo - 7/20/02) authorized the BMP improvements to road drainage on all roads in Big Creek (inside and outside fire area) that are proposed for use during the post-fire salvage operation, or were not to be decommissioned in the near future.

**#313 Public Concern: The Final EIS should disclose the impacts to water quality limited stream courses.**

Please make sure that beneficial uses of the water bodies in the analysis area would not be degraded. The NEPA analysis should disclose the impacts to water quality limited stream courses.

**Response:** The entire main-stem of Big Creek is identified as a water quality limited stream reach. The hydrology assessment addresses the effects of the water yield, sediment yield, and nutrient yield from the proposed activities in Alternatives 1 thru 5 on Big Creek; therefore your request has been done.

**#314 Public Concern: The Final EIS should clarify the source areas for sediment delivery estimates.**

Page 3-186: "Two different situations were modeled for each soil map unit within the potential salvage area boundary: 1) Post-fire potential sedimentation rate (immediate post-fire) 11/1/01 through 7/15/2002. And 2) the second growing season potential soil sedimentation rate 7/5/2002 through 7/15/2003 with no salvage treatments applied." Please clarify for the public that the WEPP analysis conducted to estimate the potential sediment delivery includes only those acres within the potential salvage area boundary—not the whole Moose Fire area as implied on Page 3-195. This needs to be clarified to prevent misunderstanding about the fire effects—Page 3-195, Table 3-68: first year post fire = 125,423 tons—versus the proposed first year salvage logging effects of 509 tons. (Wood Products Industry/Association, Kalispell, MT - #1200)

**Response:** You are correct, as described in the DEIS in fourth paragraph page 3-195 and the footnote to Table 3-68 and in the FEIS, the potential post-fire sediment yield is only for the Forest Service lands within the Moose Post-fire Project Area, or essentially Big Creek and a small area on the southern portion of Demers Ridge.

**#315 Public Concern: The Final EIS should emphasize that proposed logging barely increases sedimentation proportionate to total sediment load.**

"The potential sediment from the proposed salvage is significantly less than from the burned area. For Alternative 2 and 5 with the highest potential sediment from salvage activities, it is 4% of the year one potential sediment from the burned area and 1.4% of the year two potential sediment from the burn area." You should assertively confirm that the proposed salvage logging would potentially increase sediment delivery on the same acres by less than 1% over the existing post fire effects. And that with correct application of Best Management Practices and Riparian Habitat Conservation Areas standards, there should be little, or no sediment delivery to streams from the salvage logging activity. We suggest that you also illustrate that other burned areas outside of the proposed salvage areas will generate huge amounts of sediment during the first two years post fire and, if possible, quantify the magnitude of the sediment delivery across the whole post fire area and compare the total sediment post fire to the proposed salvage logging unit effects. . . . Temporary Road Construction Page 3-209, Table 3-75: Your analysis indicates that the proposed temporary road construction and use for the salvage logging will yield an additional 0.5 tons of sediment. We concur that this is an insignificant increase over the first year fire effects on the proposed salvage logging area. We suggest that you clarify that this temporary road construction and use will increase the potential sediment yield by 0.0004% (0.5 tons/125,423 tons) as compared to the post fire effects. There is sure to be a public "brouhaha" about the sediment increase due to any new, albeit temporary, road construction.

**Response:** The information on the entire Moose Fire potential sediment yield is a portion of the project file for the Moose Post-fire Project. Because of the confusion factor of talking about the entire fire area and then the proposed salvage area it was decided to only describe the post-fire effects for the proposed salvage area. The idea being that the effects of the fire and any man-caused disturbance would be summarized for the same piece of land. During the field examination of the proposed units it was determined that no new temporary road construction would be needed to implement the proposed salvage activities, therefore it was dropped in the FEIS.

**#316 Public Concern: The Final EIS should define assumptions used in the watershed models.**

We are concerned that the watershed models used may not accurately predict soil impacts (DEIS 3-171). What are the assumptions used in watershed modeling and how different are conditions in the project area?

**Response:** WATSED model was developed for use in predicting water yield and sediment yield for forest conditions and forest management practices in the western Montana and northern Idaho. The response curves in this model are based upon local data and professional knowledge of this part of the world. The only assumption needed in the water yield modeling effort was the amount of live forest vegetation cover in the burned portions of the analysis watersheds. Based upon initial post-fire surveys, 3% live vegetation cover in the burned areas was assumed for the modeling effort.

The WEPP model was used to model sediment yield. This model is one of the most advanced erosion prediction model for modeling hillslope erosion available. There are two inputs into the model where professional judgment is needed. The first decision is the climate station data to be used. Bigfork weather station data was used because it reflects more of the local mountain climate relationships than does the Kalispell Airport data. The second “assumption “ concerns the amount of vegetation cover on a site at different time periods after the fire and the amount of reduction in vegetation cover the helicopter, cable and ground skidding would cause. These assumptions were based upon the combined 50 years of field experience, logging monitoring, and post-fire vegetation monitoring of the two soil scientists doing the WEPP modeling. All the “assumptions” made were done to reflect local conditions as closely as possible.

**#317 Public Concern: The Flathead National Forest should identify and prevent road maintenance and harvest activities that cause or contribute to non-point source pollution and stream impairment.**

We support inspections and evaluations to identify existing road conditions that cause or contribute to non-point source pollution and stream impairment. It is important that erosion control be kept current with log skidding activities and that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important to maintain crowns on roads and to provide adequate dips and/or waterbars to promote drainage off roads.

**Response:** We agree with all of the points identified in your comment. In Big Creek this year there has been an extra-ordinary effort to bring all roads that are not proposed to be decommissioned, up to BMP road drainage standards. This work is almost completed. Any other potential road drainage problems on roads proposed for decommissioning were also fixed this field season. The road maintenance and/or timber sale administrators in charge of contract blading or timber sale road maintenance are aware of your concerns and desires. They are the same goals we have for proper road maintenance.

**#318 Public Concern: The Flathead National Forest should develop measures to reduce excessive existing sedimentation.**

The table 3-59 on page 3-173 displays sediment yields for years 1986 through 1992. It is interesting to note that there is a variation from 8.4 to 199.8 tons/square mile. There has been very little timber harvesting in the drainage since the late 1970 thus most of this sediment is from natural sources. There appears to be very little effort being planned to take care of this sediment. Why are measures not being taken?

**Response:** A portion of the sediment yield table is natural background, and a portion is due to man’s activities (e.g. road building). In the Watershed Restoration Plan for Big Creek, North Fork of the Flathead River (2002) there are seven sediment pollution situations (natural and man-caused) described and proposed rehabilitation measures for

each one. Five of these described sediment problems are currently being worked on under various projects in Big Creek.

**#319 Public Concern: The Flathead National Forest should develop measures to control sedimentation from the large landslide west of the Big Creek Education Center.**

We are pleased that none of the stream bank escarpment mass failure sites or unstable stream reaches should have significant increases in potential sediment yield due to the wildfire (page 3-185). A large natural landslide directly west of the Big Creek Education Center is identified as an exception to this, contributing sediment to Big Creek. Are there any feasible measures to control or capture this sediment before it enters Big Creek? (U.S. Environmental Protection Agency, Helena, MT - #262)

**Response:** There are not any feasible treatments to the landslide in question that would significantly reduce the erosion, known by the district hydrologist. The most effective method of reducing the amount of sediment delivery into Big Creek from this landslide would be to armor the toe of the landslide with large rock and try to divert the streamflow away from the landslide toe area. Both of these practices would require the use of machinery in Big Creek and the construction of a temporary road to access the site. The Montana Fish, Wildlife and Parks fishery biologists are not in favor of either of the activities at this time.

**#320 Public Concern: The Flathead National Forest should consider sustainable yield management practices to reduce soil erosion effects caused by fire.**

While picking mushrooms on the Moose Fire acres, what struck me most, was the soil erosion taking place. Fire is inevitable in the forest. However, the impacts can be less devastating when sustainable yield management practices are being utilized. (Individual, Whitefish, MT - #1248)

**Response:** Relatively speaking there has been very little soil erosion occurring on the Moose Fire area when compared to the potential, i.e. the amount of erosion that has occurred on other similar areas following wildfire in the Northern Rocky Mountains. However, there has been some soil erosion occurring and there is potential for more to occur until the burned area is entirely revegetated.

Burn Severity, the amount of heating of the soil during a fire can be reduced in most cases when fewer fuels are present to burn. However, this is not always the case in all wildfires, or portions thereof.

**#321 Public Concern: The Flathead National Forest should consider less disturbing logging methods for unit 21 to reduce sediment production potential during harvest.**

It is stated that the proposed units having the highest potential for sediment reaching a stream are units 21, 50, 54, 56, 64, and 65 (page 3-200). It appears that less ground disturbing skyline cable or helicopter logging is proposed in these units, with the exception that unit 21 is proposed for ground base tractor skidding. Would it be appropriate to use less disturbing methods for unit 21 to reduce sediment production potential during harvest of this unit (e.g., winter logging)? (U.S. Environmental Protection Agency, Helena, MT - #262)

**Response:** After the field examinations of the proposed units this summer unit 21 is proposed for winter-logging under Alternatives 2, 3, and 5; along with being reduced in size. Under Alternative 4 unit 21 would be helicopter yarded. These changes are reflected in the FEIS.

**#322 Public Concern: To limit sedimentation, the Flathead National Forest should decommission roads.**

Decommission at least 87 miles of road. The DEIS says this is best for fish and water quality, providing the largest decrease in chronic sediment from roads. (Individual, Cohasset, MA - #11)

**Response:** The Alternative 4 proposed action would decommission 87 miles of road in Big Creek. If that alternative were chosen, the desired effect described in the comment would be accomplished.

**#323 Public Concern: To limit sedimentation, the Flathead National Forest should not decommission roads.**

Item 8. Decommissioning produces large amounts of sedimentation into the streams and is therefore not a viable solution. A manipulation of the environment within these areas will be required. (Individual, Kalispell, MT - #1229)

**Response:** Amendment 19 of the Forest Plan requires that certain road management standards be met in order to meet grizzly bear security needs. This may require a road to be decommissioned and stream culverts to be removed. Yes this process yields some short-term sediment to the streams; however, in most cases there is a long-term sediment reduction associated with the decommissioning of a road. The short-term sediment increase is the environmental expense of attaining adequate grizzly bear security.

**#324 Public Concern: The Final EIS should reconsider whether road decommissioning best limits sedimentation.**

Analysis of effects on sediment production for road decommissioning activities needs to be carefully compared to existing documented sediment delivery rates for stable, restricted use forest roads. SAF supports removal of high-risk drainage structures where appropriate, but preserving other adequate structures for potential future use of the existing road system.

**Response:** Please see the response to comment #324. The Forest Plan requires that stream aligned culverts be removed from "reclaimed" roads. The analysis the commenter is requesting is most appropriately done when the Amendment 19 grizzly bear security standards are reassessed during Forest Plan Revision.

**#325 Public Concern: The Flathead National Forest should not limit roadbuilding because of sedimentation concerns.**

Page 10. Item 3b. Sediment from burned area runoff had to exceed thousands of tons. Calculating these .5 tons of sediment and trying to prevent roadbuilding because of it is a foolhardy exercise and is not prudent or practical. An estimation of sediment that will enter the streams from sources other than roads during each significant weather event should exceed 100 tons or more.

**Response:** Road density in the Moose Fire area must be reduced, not expanded, to meet Forest Plan standards.

**#326 Public Concern: The Flathead National Forest should not build temporary roads that may cause increased sedimentation to streams.**

Issue 3: The use of temporary roads may cause increased sedimentation into streams. True. Thus the cure (temporary roads) is worse than the disease (salvaging).

**Response:** After the field examination of the proposed units this summer it was determined that the units that initially needed temporary roads constructed to them should either be helicopter yarded or winter-logged neither of which require any temporary road construction to occur. Therefore, no temporary road construction is proposed for any of the action alternatives in the FEIS.

**#327 Public Concern: The Final EIS should clarify that culvert removal pertains only to stream crossing culverts.**

Page 3-197: Stream crossing culvert removal. We are pleased that you have conducted a basic "risk analysis" and sediment potential of stream crossing culvert removal vs. culvert plugging and failure and have quantified the estimated sediment delivery. This is a good start. However, we suggest that you clarify that you are talking about stream crossing culverts here and not ditch relief and other non-stream culverts (Table 3-69).

**Response:** The respondent is correct that only stream-crossing culverts are being addressed within the forest plan road decommissioning standards and within the EIS effects analysis. Ditch relief and other non-stream culverts are not to be treated by any of the action alternatives. The improvement of non-stream or ditch relief culverts was addressed under the Big Creek BMP Improvement Project decision memo (July 2002).

**#328 Public Concern: The Flathead National Forest should develop an alternative that includes full culvert excavation.**

.....nor was an alternative developed that fully excavated culverts.

**Response:** Alternatives 2, 4, and 5 propose that culverts are fully excavated and removed on all decommissioned roads. The project-specific Forest Plan amendment included in Alternative 3 allows for the 10 specific culverts or other in-stream structures to remain in the streams on specific roads used for snowmobile travel. Refer to the FEIS for more detail.

**#329 Public Concern: The Final EIS should provide a road decommissioning and culvert removal schedule.**

To ensure protection of water quality and wildlife security a schedule for the road decommissioning and culvert removals must be completed.

**Response:** A proposed schedule of road decommissioning is being provided to the U.S. Fish and Wildlife Service as part of the grizzly bear and bull trout biological assessments for the Moose Salvage Project, and is included in the project record.

**#330 Public Concern: The Flathead National Forest should assess the likelihood of culverts plugging and washing out based on documented occurrences.**

There is no assessment of the probability of culvert plugging and washing out based on documentation of actual occurrences, only an inadequate, biased, unverified theoretical analysis of sediment produced by road obliteration is presented.

You have not elucidated the probability of stream crossing culvert plugging and subsequent mass erosion of the road fill prism adjacent to the crossing. This is the popular theme presented regarding the issue of stream crossing culverts plugging and being washed out—generating "massive" sediment delivery. In January 2000, MLA filed a Freedom of Information Act (FOIA) request to find out the specific and total number of stream crossing culvert failures on the Flathead National Forest since 1985. This information was delivered to MLA on March 7, 2000 and illustrated that official Flathead National Forest records showed that 25 stream crossing culverts and 3 bridges have failed since 1985—hardly a significant number of the thousands of stream crossing culverts and bridges on the whole Flathead National Forest. . . . The only documented culvert failure that Hammer; et al document is the celebrated 1999 Nokio Creek culvert failure.

**Response:** The question to be addressed within this EIS is the effect of culvert removals (sediment increase) associated with the proposed road decommissioning under Alternatives 2 thru 5. FEIS Table 3-69 reflects the best available local information as the soil erosion associated with culvert removals in this area. The volume of eroded soil if a culvert was to plug and fail was reported to give the reader some comparison of the short-term erosion potential with a culvert being removed versus the same culvert failing. The discussion in the EIS reports the potential sedimentation associated with the proposed culvert removals on various road segments, under the different alternatives. This is based upon the number of culverts to be removed and the depth class of each culvert. This assessment was not meant to deal with the probability of any given culvert failing. This would be extremely problematic analysis because of all the variables that come into play whether or not a culvert may fail, and would not answer the question, what is the effect of removing a culvert. However, Table 3-69 was intended to reflect the neither culvert removals and/or culvert failures are benign to water quality.

Because of the values at risk (key bull trout habitat) the effects of any culvert failure could be significant in Big Creek. The removal of culverts is driven by the desire to meet Amendment 19 road density standards for grizzly bear security, and not due to the probability of a culvert to failure.

**#331 Public Concern: The Final EIS should analyze the resource impacts and net cost/benefit of culvert and drainage structure removal.**

The failure of drainage structures forest roads and associated water quality impacts is touted as another reason for the need for extensive road decommissioning. The documented failure rate for drainage structures on forest roads within the Flathead National Forest is actually very low. Detailed analysis would need to prove the net cost-benefit of arbitrarily removing culverts and drainage structures from existing, well-designed roads. (Wood Products Industry/Association, Missoula, MT - #1196) According to our FOIA, the documented rate of stream crossing culvert failure is < 1%—hardly a significant issue or a significant effect upon the human environment. We suggest that you conduct a separate and accurate risk assessment of stream crossing culvert failure as a part of a separate analysis and decision regarding the road reclamation and stream crossing culvert removal proposed in the DEIS. . . . Your proposed road reclamation actions have a significant direct and cumulative effect upon the human environment that appears to be based on the arbitrary and capricious perception of a stream crossing culvert failure problem. Furthermore, the total proposed road reclamation sediment yield is estimated to be between 2,424 and 2,517 tons—Table 3-71. This is significantly more, 549% more, than the 391 to 509 tons of sediment yield estimated for the salvage logging activities. This raises a serious question regarding the need for stream crossing culvert removals versus the perceived, but not documented, water quality and grizzly bear security benefits of stream crossing culvert removal. Thus, any decisions concerning road reclamation and stream crossing culvert removal will be arbitrary and capricious based upon your own analysis.

**Response:** Culvert failures are reduced when a road is decommissioned and the culverts are removed. The reduction in culvert failures is a result/effect of the road decommissioning, not the reason for it. Currently in order to meet the requirements of Amendment 19 to the Forest Plan the stream aligned culverts need to be removed. That is unless a site-specific forest plan amendment is developed for leaving a culvert in a decommissioned road, as is the case with Alternative 3. In this EIS all I (the team hydrologist) can do is assess the sedimentation effects of the proposed actions of removing the culverts associated with decommissioning a given road segment, and not the social or economic effects of road decommissioning to attain grizzly bear security goals. The analysis the commenter is requesting is most appropriately done when the Amendment 19 grizzly bear security standards and road decommissioning standards are reassessed during Forest Plan Revision.

The commenter is misinterpreting Table 3-71. The sediment reduction from road decommissioning from Alternatives 2 & 3 would be 2,862 tons (existing condition) minus 2,517 tons (Alt. 2 & 3) or 345 tons/year of sediment yield reduction due to road decommissioning proposed in Alternative 2 & 3.

**#332 Public Concern: The Final EIS should fully consider water quality impacts of flattening slopes into and out of culvert removal areas.**

Alternatives 2, 4 and 5 propose actions such as flattening slopes into and out of culvert removal areas to accommodate snowmobile use. Not fully excavating all the fill around culverts and pulling the slopes back when culverts are removed leads to incremental erosion of the fill material into the streams. This causes chronic water quality problems and affect fish habitat. The DEIS did not fully examine these impacts.

**Response:** If the overburden on top of a culvert, or a flattened bench is revegetated in the same manner that the streambank side-slopes are at a culvert removal site, and there are no instability problems, than there should be virtually no difference in the amount of potential erosion from a site. If anything, a culvert removal site that is not treated in this manner has a slightly higher potential due to the greater steepness of streambank side-slopes.

**#333 Public Concern: To comply with Amendment 19, the Flathead National Forest should remove all stream-bearing culverts and should prevent motorized access on decommissioned roads.**

Amendment 19 sets limits on both open and total "motorized access density," requires that all stream-bearing culverts be removed from decommissioned roads, and requires that all decommissioned roads be "treated in such a manner so as to no longer function as a road or trail"—period! It does not provide for culverts to be left in place nor does it provide for trails to be benched into re-contoured slopes to facilitate motorized travel. Our letter of June 24, 2002 in this matter is enclosed to provide further detail. We cannot emphasize enough the adverse effect leaving culverts and benched areas in decommissioned roads would have on water quality and fish. Some of the culvert removals in Coal-Mathias left a bench to accommodate snowmobiles and those benches served to collect water, saturate the underlying road fill, channeled surface water and sediment to the streams, and may very well have contributed to subsequent slumping of re-excavated road fill. . . . The Moose DEIS makes it clear, at 3-218 and 3-241, not leaving culverts in place to accommodate snowmobiling is less risky and best for fish and water quality.

Fully implement Forest Plan Amendment 19 and decommission the 87 miles of road or more, removing culverts and preventing the routes use by mechanized vehicles. This will decrease the sediment entering Big Creek and its tributaries. Don't reopen any roads.

**Response:** There is less risk of sediment entering a stream if the culvert and all the soil material above a culvert is removed from the stream channel area. If a culvert is left in place and a portion of the overburden is removed this is less risk of sedimentation than if none of the overburden is removed. The effect of leaving a culvert in the streambed with a portion of the overburden material (2-3 feet) in place is a slight increased risk of sediment yield from the site if the culvert were to plug and fail, but substantially reduces the risk as compared to leaving the culvert as is. This is the effect of making this stream crossing snowmobile usable.

We agree in the long-term decommissioning 87 miles of road would decrease the sediment entering Big Creek; however, in the short-term during decommissioning it would increase the sediment entering Big Creek.

### **#334 Public Concern: The Flathead National Forest should not enhance snowmobile access at stream crossings.**

Our inspection of the unauthorized Lost Johnny bridge on June 26, 2002, showed very recent use of bare and muddy slopes on either side of the snow-free bridge and further up the mountainside. If a culvert were left in a decommissioned road and/or if benched areas were left during re-contouring; our experience indicates there would be substantial use of these streamside areas during times when they are free of snow and most vulnerable to damage and erosion. Enhancing snowmobile access at stream crossings in the name of safety is a ruse for providing easier access during periods of inadequate snowpack.

**Response:** Anytime a snowmobile operator is causing resource damage, then that person is breaking the law. There is legal authority in the Code of Federal Regulations to cite a person doing resource damage to trails or roads. The Forest Service has the legal responsibility to provide a safe riding surface on designated snowmobile routes. It would not be prudent for managers to allow unsafe situations to exist, from a liability standpoint, along designated snowmobile routes. It is important to point out that the snowmobile routes in question have never been closed to snowmobile use. Retaining 10 specific culverts in place to allow continued snowmobile use during the grizzly bear denning period can hardly be considered "a ruse for providing easier access during periods of inadequate snowpack." If anything, removal of the rest of the stream aligned culverts along these roads will make snowmobile access more difficult, and will likely completely restrict (physically) use when streams rise in the spring and "snow bridges" across streams are no longer viable. Aside from one report of a snowmobiler riding across bare ground in the Strawberry Lakes area in the spring of 2002, we have received no reports, nor are we aware of any resource damage, relating to snowmobile use in areas with no snow. Since snowmobiles are severely damaged by riding on surfaces other than snow, it is extremely unlikely that this is or will become a widespread problem.

### **#335 Public Concern: The Flathead National Forest should replace high risk and undersized culverts prior to permanent road closure.**

Since it is shown in Table 3-69 (page 3-198) that culvert plugging can result in significant erosion and sediment delivery, we support efforts to evaluate adequacy of culvert sizes on roads that are proposed for road closure with a berm, since such berm closure makes access for road maintenance difficult (i.e., removing culvert plugs, replacing failed culverts). It is our

understanding that road inspections would be done and high risk and undersized culverts would be replaced before roads would be closed with berms (page 3-201). Is this correct?

**Response:** It is correct that all culverts on roads proposed to be bermed would be correctly sized and any needed maintenance done prior to closing of the road with a berm. Monitoring and regular maintenance needs inventory will be done on the culverts behind berms (See FEIS Appendix E).

**#336 Public Concern: The Flathead National Forest should not replace culverts that will subsequently be removed.**

Chapter 3 of the DEIS makes it clear replacing and again later removing 3 to 5 culverts to facilitate timber salvage prior to decommissioning will cause unwarranted short-term contributions of sediment to streams.

The DEIS discloses that 3 to 5 of the identified culvert replacements will occur on roads that will later be decommissioned. This appears to be fiscally and ecologically irresponsible because there are double costs to replace culverts then remove them, as well as compounding the effects on water quality and fish habitat.

**Response:** After further field inventory this summer it was determined that no stream aligned culverts on any of the roads proposed for future decommissioning needed to be upsized prior to any hauling of salvage logs. There were additional ditch drainage culverts added to these roads to improve drainage and reduce sedimentation.

**#337 Public Concern: The Final EIS should describe how and when culvert monitoring will occur.**

All action alternatives also propose berming roads and leaving culverts in place. The DEIS says that monitoring will be done to ensure that these culverts do not plug; however, there is no monitoring schedule. How often will these bermed roads be monitored? What season will they be monitored? How will problems be addressed (i.e., will machinery have to be brought in to clean out plugged culverts)?

We remain greatly concerned by the number of roads that would have culverts left behind berms or other permanent closure devices. In its March 8, 2002 bull trout biological opinion on the Spotted Beetle project, Fish and Wildlife Service requires that such culverts be inspected every year. The Flathead, however, finds it has funding to inspect culverts only on the order of every 3-4 years! The risks to water quality and fisheries are obvious and unacceptable, especially in Big Creek. These risks are especially unwarranted in a burned area where mature timber harvest opportunities requiring roads will not be available for some 100 years. So why such an emphasis on keeping these roads around when there is already an outrageous backlog in road maintenance and far more miles of road in the Big Creek watershed than there are stream miles? Flathead Forest Plan Revision Data shows 190 miles of roads dominating 150 miles of streams in Big Creek!

**Response:** In the past culverts on roads behind berms were monitored bi-annually during the summer. Based upon additional funding requests the culverts behind berms will be monitored annually in the future (summer period). See FEIS Appendix E. Any problem with needed maintenance e.g. cleaning will be done using hand tools unless agreed to by the U.S. Fish and Wildlife Service. Roads are closed with a berm when road density needs to be reduced in order to meet wildlife security needs; Amendment 19 does not require all roads closed for security needs to be decommissioned. We berm roads when there is a future need for the road.

**#338 Public Concern: For all proposed alternatives, the Final EIS should demonstrate compliance with the Clean Water Act and with all state water quality laws and regulations.**

The NEPA analysis should show that the proposed alternatives would comply with the Clean Water Act and all state water quality laws and regulations. Please note that merely designating BMPs is not sufficient for compliance with CWA and NFMA.

**Response:** By properly *implementing* the designated BMP's the proposed action meets the requirements of the Clean Water Act and state water quality laws and regulations. The commenter is correct that designating BMP's alone is insufficient to meet the requirements of the law. In addition, if other practices not designated are needed to maintain non-degradation, they need to be employed.

**#339 Public Concern: The Flathead National Forest should ensure that project activities are consistent with Total Maximum Daily Load development for long-term stream recovery.**

Big Creek is listed as water quality impaired by the State of Montana (i.e., on Montana 303(d) list), and accordingly, a Total Maximum Daily Load with water quality restoration plan must be developed for Big Creek. The EPA appreciates the major role of the Flathead National Forest in preparing a Water Quality Restoration Plan for Big Creek. The draft Water Quality Restoration Plan for Big Creek recommends reclamation of roads in the Big Creek drainage. Estimated annual reductions of sediment from road decommissioning will likely more than compensate for the short-term delivery of sediment from timber harvest and road obliteration. Over the long-term sediment delivery should be significantly reduced to Big Creek as a result of road decommissioning. The proposed Moose Post-Fire project activities including BMPs and road decommissioning should, therefore, avoid further degradation of Big Creek, and should be consistent with TMDL development for long-term stream recovery. We do recommend that the Forest Service contact the MDEQ to fully assure that the MDEQ also considers the Forest Service's proposed actions to be consistent with TMDL development to restore water quality. . . . It is important that proposed logging and road construction activities do not further degrade 303(d) listed streams, and that proposed activities be consistent with the State's development of TMDLs to restore water quality and beneficial use support. . . . The EPA very much supports proposed road decommissioning as a means of promoting long-term watershed recovery.

The selected alternative must be in compliance with the WRP or Total Maximum Daily Load that has been developed for Big Creek.

**Response:** Two Montana Department of Environmental Quality representatives were given a tour of the Moose Fire area and all of the proposed actions within the draft EIS dealing with salvage logging and/or road management changes (e.g. road decommissioning) were discussed. The department has since written a letter to the Flathead National Forest stating that no action proposed in the Moose Post-Fire Project would be in conflict with the TMDL Plan being finalized for Big Creek (Project record exhibit C-4).

**#340 Public Concern: The Flathead National Forest should monitor hydrology in the project area throughout the project period, and allow for any modifications should significant hydrologic change be detected.**

Major fires such as the Moose fire can result in landscape hydrologic changes including increased water yield and increased availability of ground water. It may be possible that some stream segments currently classified as "intermittent" may flow more often or become permanent, and that stream channels may become more defined due to increased runoff. Additionally, it is likely that the increase in available water will result in emergence of new springs and seeps in the project area. We therefore encourage the Forest Service to visually monitor the surface hydrology in the project area throughout the project period, and allow for any modifications to the project that would be necessary to protect water quality should significant hydrologic change be detected. Monitoring should be an integral part of any management decision. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of impacts, so they may be mitigated. Monitoring and feedback of monitoring results to managers is critical to the success of a land management plan.

**Response:** We agree with this comment. Visual monitoring of the perennial streams, ephemeral streams, and seeps is critical after a fire event. During the implementation of the proposed activities the district hydrologist and the timber sale administrator will do this type of monitoring. Any needed changes to the implementation plan can be done to reduce water quality degradation (e.g. new stream channel found).

**#341 Public Concern: The Final EIS should discuss funding sources for Best Management Practices and the efficacy of Best Management Practices in preventing sediment from reaching watercourses.**

Discuss the actual effectiveness of proposed BMPs in preventing sediment from reaching watercourses in or near the analysis area. What BMP failures have been noted for past projects with similar land types? We would like to see a thorough discussion of the BMPs and mitigation measures you would propose. This discussion must go beyond a mere listing, and include the following: their relative effectiveness in achieving their intended goal(s), based upon experience in the District; how dependent they are on outside sources of funding (e.g. K-V funds); the likely consequences should those funding sources not be realized. Naturally, any mitigation costs (e.g. K-V funds) should be disclosed in the economic analyses.

**Response:** Appendix C is a list/description of the general BMP's that are appropriate for the cutting units and roads in the Moose Post-fire Project area. Also, in Appendix C is a list/description of the BMP's specifically designed for Moose Post-fire Project area. There is a discussion of the recent past implementation of BMP's on the Flathead National Forest and their success based upon BMP audit results within the soil's section of the FEIS. None of the proposed BMP practices are dependent on outside funding sources for implementation. Please note that a separate BMP project was authorized in July 2002, funding secured, and work is currently being implemented in the Moose Fire area. Completion is anticipated in the late summer of 2003. The rapid progress on bringing roads up to BMP standards demonstrates that the Forest recognizes the importance of these practices, particularly in this burned landscape.

**#342  
Technical and Editorial**

It is stated (page 3-199) that the most sensitive reaches within the post-fire salvage project are lower Vogt Creek, and the lower 400 foot reaches of Big Creek tributary #1 and the unnamed stream directly east of Big Creek tributary #1. We note that Table 3-63 (page 3-180) shows Vogt Creek, an unnamed Creek in Section 23, and Langford Creek in Section 17 as having "poor" Pfankuch stream ratings. Are the unnamed Creek in Section 23 and Langford Creek in Section 17 from Table 3-63, the same stream reaches that are labeled sensitive reaches on page 3-199 (i.e., the Big Creek tributary #1, and unnamed stream east of Big Creek tributary #1)?

**Response:** The commenter is correct that these are the same streams. The unnamed tributaries were not numbered until the watershed modeling analysis was done, after the stream reach inventory work was completed.

***Fisheries*****#343 Public Concern: The Final EIS should provide detailed analysis of project impacts to fisheries and water quality.**

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. The analysis should not only include modeled analyses; it should include full information on the limitations of all models used and site-specific information. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Please disclose the impacts of previous, ongoing and reasonably foreseeable activities and events on lakes and ponds and disclose the potential impacts of activities proposed in this project. If any livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation. Disclose the impacts of grazing, mining, roads, skid trails and jammer routes, other access routes, motorized use and other activities that impact water quality and fisheries.

**Response:** The Moose Post-Fire Project Draft Environmental Impact Statement (DEIS) included 82 pages in the Hydrology and Fisheries sections describing the condition of, and potential impacts to the aquatic ecosystems in the watershed. The models used to estimate potential sedimentation are subject to the limitations of all models, including the use of limited variables to describe very complex systems, and the results of modeling should only be

used to compare the effects of various alternatives in a relative manner (see page 3-171 in the DEIS for a discussion of the models employed in the analysis). All wetlands, seeps, and bogs within the project area will be protected with buffer zones in compliance with INFISH and the project is not expected to impact these areas. See hydrology exhibit Q-29 in the project record for a map of riparian land types in the watershed. There are several areas along Big Creek where beaver dams on small tributaries have created a network of ponds, but none of these are within harvest units and all will be protected by riparian buffers. INFISH buffers will likewise protect all scoured channels in the project area regardless of whether they are flowing or dry. No livestock grazing or mining occurs in the project area, and has not affected the watershed historically. The effects of other historic and contemporary uses are discussed in the DEIS.

#### **#344 Public Concern: National Forest should minimize impacts to wetland and riparian areas.**

EPA considers the protection, improvement and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of No Overall Net Loss of the Nation's remaining wetlands, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement. We are pleased that INFISH requirements would be followed for all treatments within or adjacent to wetlands or riparian areas (page 2-11), and that an alternative is being considered that even exceeds INFISH requirements (i.e., Alternative 4). We also support the marking of riparian areas and wetlands on timber sale area maps and flagging on the ground to allow contractors to avoid such areas. (U.S. Environmental Protection Agency, Helena, MT - #262)

The recent fires caused natural injuries to the area. Therefore water quality and fisheries are at their most threatened, and probably are degraded. Now is not the time for the Forest Service to exacerbate these impacts, especially in riparian areas, but anywhere that water quality could be impaired. The Forest Service should employ minimal disturbing activities, instead selecting insect-protection options that do not require substantial harvest from already fragile and impaired areas.

**Response:** The Flathead National Forest shares the concern of the public and other agencies regarding the protection of water quality and riparian areas. The action alternatives of the Moose Post-Fire Project were designed, and would be implemented, in a manner that would protect water quality in the short-term and result in long-term improvement. All harvest and road decommissioning activity would utilize methods to minimize disturbance to the soil and aquatic environment, including helicopter logging, winter logging, the use of slash mats, etc, as described in the DEIS and FEIS. All stream channels and wetlands will be clearly marked on the ground and harvest unit boundaries will be marked to reflect the necessary buffer distances. (see table in Chapter 3 of the FEIS). The fisheries biologist would inspect the unit boundaries and buffers around sensitive wetland sites prior to, and during harvest to insure compliance with the goal of protecting water quality and the aquatic environment.

#### **#345 Public Concern: The Final EIS should include analysis of potential impacts to small streams and rivers.**

The DEIS analysis is significantly tied to Big Creek. It appears that by using such a large-scale analysis, the DEIS avoids analyzing local impacts from proposed actions. There are some discussions of impacts to smaller creeks, but these neither capture nor include potential impacts on small streams and rivers that flow into Big Creek. The Forest Service should expand the analysis to insure that localized impacts are measured and realized. This is especially important for migratory fish species.

**Response:** The hydrology section of the DEIS discussed the impacts of the fire and project activities on a sub-watershed basis, delineating those areas by predominant tributary of Big Creek (see tables 3-58 and 3-62 in the DEIS). The DEIS identified our concern with all water bodies in the project area by extending buffer protections to them regardless of their size. This protection will extend to any ephemeral channels created as a result of increased water yield resulting from the fire. From a fisheries perspective, the potential impacts to bull trout spawning in the watershed are the greatest concern, and the most sensitive habitat feature relative to this concern is the quality of the spawning gravels. The protection of streams tributary to the spawning reach is necessary to maintain the quality of the spawning habitat, and is an integral feature of our overall strategy to maintain and enhance water quality in

the watershed. The same protections are afforded to all wetlands and streams below the spawning area, which do not pose a risk of contributing sediment to the spawning area. INFISH requires that we protect all stream and wetland habitats, regardless of their nature and biotic communities, and all alternatives would comply with INFISH standards.

**#346 Public Concern: The Final EIS should use more recent water quality data as a baseline for the project area.**

The Water Quality data analyzed often seems quite old, such as nutrient information from 1987 (p. 1-189) and core samples only going up to 1990 (p. 3-226). This may be a typographical error. If it is not, and for all areas where there is no recent data, and no post-fire data, the Forest should collect more recent data to act as actual baseline for the project areas. Absent sufficient baseline data, it is difficult or impossible for the Forest Service to take a hard look at the impacts considered here and it is impossible for the Forest to later effectively assess project impacts (whether water quality is improved or degraded). In the case of INFISH RMO's, even the older data suggests many things not meeting compliance, particularly related to sediment impacts (table 3-83). The Forest Service should strive to improve water quality, not allow it to further incrementally degrade.

**Response:** The nutrient analysis on pg. 3-189 of the DEIS is the best available data for the North Fork of the Flathead River. The table on page 3-226 of the DEIS contains sediment data through the year 2000, not 1990 as stated in this comment. The text above on the same page also presents the preliminary data for year 2001, indicating a further decline in fine sediments to 30%. The Flathead National Forest will continue to support collection of habitat data by the Montana Dept of Fish, Wildlife, and Parks, including sediment and substrate quality. The Flathead National Forest recently conducted an inventory of fish habitat conditions in lower Big Creek, which better enables us to determine the condition of the stream relative to INFISH RMOs.

**#347 Public Concern: The Final EIS should analyze existing habitat degradation impacts to fish.**

It seems ironic for the DEIS to identify important habitat features that are in poor quality, such as sediment impacts, and then conclude that species composition is mostly caused by species changes in Flathead Lake. While lake effects are not to be ignored, the DEIS should fully analyze the impacts to fish from poor habitat. Especially if the project-area waters are not supporting their designated (clean water act) uses, such as cold water fisheries, then the DEIS must analyze how these designated uses will be impacted by the proposed actions.

**Response:** The hydrology sections of the DEIS and FEIS discusses the 303d status of the Big Creek watershed. The cause of the 303d listing in Big Creek was increased sediment levels, a topic analyzed extensively in the soils, hydrology, and fisheries section of the DEIS and FEIS. A panel of experts recently concluded that changes in the food web in Flathead Lake are most responsible for the decline of bull trout in the upper Flathead basin (see Chapter 3 of the DEIS and FEIS). Comparing bull trout populations in managed as well as unmanaged, wilderness watersheds supports this conclusion, as bull trout populations have declined equally in both environments.

**#348 Public Concern: The Final EIS should analyze project impacts based on existing, post-fire stream conditions.**

The proposed project areas include important habitat for fish conservation and are susceptible to individual and population injury resulting from proposed actions. The proposed activities will result in clear adverse impacts, even though some may be in the short-term. The protections proposed in the DEIS are based on flawed or non-existent standards, particularly because much of the DEIS predicated decisions on non-post-fire information and the DEIS attempts to portray fire-caused impacts as related to harvest impacts instead of as background. The DEIS anticipates that BMPs will protect water quality, fisheries, and other resources (e.g. p.3-222). But the BMPs and other conservation practices must be analyzed for the post-fire (burned) environment, including steep slopes burned to the water's edge, such as those in the proposed harvest area. This analysis should include the varying environmental factors specific to each area. The fisheries function analysis identifies many indicators that are functioning at risk or functioning at unacceptable risk. But the analysis is based on pre-fire conditions. The Forest Service should analyze from the post-fire perspective since that is the background to the proposed salvage sales. Pre-fire information may be useful as a predictor of a post-fire restored environment, but the existing conditions do not appear to match what the DEIS discusses.

**Response:** Page 3-242 of the DEIS discusses the impact of the fire upon the condition of the aquatic environment in the watershed. The fish population and habitat function indicators of the baseline Biological Assessment were largely unaffected by the fire and its immediate aftermath. As stated on page 3-242 of the DEIS, “...the true impact of the fire upon aquatic resources will not be known for several years”. The potential effects of the fire upon the aquatic ecosystem are discussed in both the fisheries and hydrology sections of the DEIS.

Field data collection and observations continued after release of the DEIS, and this updated information has been incorporated into the FEIS. To date, (September 10, 2002), there is no evidence that the fire and related suppression activities have negatively affected fish populations. Core sample data indicates a further decline in fine sediment levels from the previous year, and recent (September, 2002) sampling of juvenile bull trout abundance in Big Creek indicate that the population is at its highest level in many years (Mark Deleray, MDFWP, personal communication). There have been isolated cases of post-fire erosion occurring in some stream channels, but the amount of erosion has been far less than anticipated by the analysis in the DEIS. See exhibit N-25 in the project record for additional analysis of BMPs and exhibit Q-28 for the results of sediment modeling for a disturbed landscape.

**#349 Public Concern: The Final EIS should not consider natural post-fire effects part of the cumulative project impacts.**

The DEIS should not treat the post-fire environment as part of the cumulative impacts caused by actions of any kind. The post-fire environment is the background, not an impact from current actions. How those actions are analyzed should reflect this reality. This is discussed elsewhere. To consider the post-fire environment as though it is an impact of a proposed Forest Service action misrepresents natural versus management actions, and also underplays potential harvest impacts.

**Response:** The Moose Fire is the most significant event to impact the Big Creek watershed in many years, and the likely impact of the fire upon the aquatic environment must be considered. As stated in the DEIS (pgs. 3-232 & 3-242) the effects of the fire upon that environment are not yet fully known and it will likely be several more years before those effects are fully manifest. Since most of the available data concerning the watershed was gathered prior to the fire, post-fire data and professional judgment must attempt to integrate the pre-fire environment with apparent and likely fire effects to properly analyze the effects of the Moose Post-Fire Project upon the aquatic ecosystem. Comparisons between possible fire effects and effects attributable to the project are intended solely to provide a scale by which the public and Responsible Official can assess the impacts of the project, and are not intended to imply that project effects are inconsequential.

**#350 Public Concern: The Flathead National Forest should avoid additional impacts to fire-impacted streams rather than using fire-impacts to justify additional disturbance.**

Water quality data for fire-caused impacts such as sediment should not be compared with impacts such as sediment caused by harvest activities. The DEIS suggests that harvest activities are related or comparable to fire-caused impacts. Such comparisons are without merit. By analogy, as discussed below in more detail, such analysis implies that the Forest Service considers acceptable only those impairments that are naturally preexisting, such as sediment loading caused by fire. . . . If that was the case, then would the Forest Service determine that logging activities in un-burned areas can cause or produce no more sediment than is found in the un-burned area produces? The appropriate measure of impacts is not whether individual effects or cumulative effects impair aquatic resources beyond the level of fire effects. Rather, the DEIS should more directly consider and assess harvest-caused impacts based on their direct impact on resources and habitat. Similarly, the comparison of short-term increases in sediment yield, which is an immediate result from harvest, is not offset by reductions in sediment sources as vegetation recovers. This recovery will happen regardless of harvest activities, and therefore harvest activities are not adding value to the restoration of the area and are instead impairing water quality in the short-term. This is a guaranteed net reduction in water quality and habitat value.

**Response:** As noted in the response to comment # 349, comparisons of project-related sediment and fire-related sediment are intended to provide a scale by which interested parties can assess impacts. The aquatic organisms in the watershed will respond to any increased sediment in the system without distinguishing the source of that

sediment. The point of comparing the potential volume of sediment from project activity to that which may result from the fire is to illustrate the impossibility of differentiating the effects of sediment based upon its source. The only distinction of merit in comparing sediment sources is the location of that source relative to bull trout spawning habitat. In addition, all project activities are designed in a manner intended to minimize additional sediment delivery to the extent possible while meeting the purpose and need of the project.

**#351 Public Concern: The Final EIS should base fisheries conclusions on sufficient data.**

Much of the analysis for fisheries seems predicated on unknowns, such as why bull trout declined. Therefore, the DEIS should expand its analysis to insure that fisheries conclusions are based on sufficient data.

**Response:** All fisheries analysis was based upon the best available data from a variety of sources encompassing the full range of available knowledge regarding the fish populations in the watershed. The most widely accepted theory explaining the decline of bull trout in the Upper Flathead River sub-population is discussed in the Fisheries sections in Chapter 3 of the DEIS and FEIS. Also see the response to comment #347.

**#352 Public Concern: The Final EIS should focus on improving water quality and expanding fish habitat.**

Protecting water resources is one of the primary organic requirements for the Forest Service. The DEIS promotes limiting fire and bugs over water quality, and thereby over water-dependent forest uses such as fisheries. Examples include the DEIS's complete failure to promote fish habitat expansion. Habitat should be weighed over harvest, and habitat should be expanded, at a minimum to buffers around the core high quality waters and existing native fish habitat areas. Likewise, the DEIS identifies as issues effects to fisheries and soil degradation. However, these issues must be expanded to not just keep the status quo, but improve water quality and expand fisheries habitat. It is not enough for the Forest to simply maintain the status quo, striving to, and asserting that, the planned harvest will not degrade water quality or habitat. The Forest Service is obligated to improve habitat and fisheries with and thru its projects, not just promote or allow short and long term degradation.

**Response:** The Flathead National Forest has developed a water quality improvement plan (TMDL) designed to address sources of sediment within the watershed (see page 3-174 in the DEIS and the Hydrology section of the FEIS). The goal of this plan is to improve water quality in the drainage and lead to removal of Big Creek from the 303(d) list. A separate project being carried out by the Flathead National Forest will expand fish habitat by replacing possible barrier culverts at seven sites with structures designed to facilitate fish passage, as described in the fisheries sections of the DEIS and FEIS. However, the vast majority of historic fish habitat in the watershed is still available and being utilized by fish populations, and recent studies indicate that the populations are doing well in the watershed. In addition to the latest bull trout data described in the response to comment # 348 above, surveys in Langford Creek recently conducted by a crew from MDFWP found large numbers of adult, juvenile, and young of the year westslope cutthroat trout, indicating a healthy population which successfully spawned in the spring of 2002 (Brian Marotz, MDFWP, personal communication).

**#353 Public Concern: The Final EIS should identify habitat improvement needs for all native sensitive fish species.**

The Forest Service should set its priority to improve bull trout, westslope cutthroat, and other native fish habitat, and habitat should be analyzed based on each of their distribution, success, and needs. The DEIS in the Fisheries section identifies many important data gaps regarding fisheries but does nothing to fill them. These include actual genetic quantification and distributions. More important, the DEIS should identify what is needed to improve habitat for all native sensitive species.

**Response:** The Flathead National Forest recognizes the importance of obtaining and maintaining an accurate and comprehensive data portrait for species and landscapes affected by management activity. We are continuing our financial support of data gathering efforts conducted by biologists from the Montana Department of Fish, Wildlife, and Parks, including habitat and fisheries status in Big Creek. A crew from the Flathead National Forest is currently conducting a habitat inventory of lower Big Creek, while a second crew is assessing culverts forest-wide to locate barriers to fish movement. In general, fish habitat in Big Creek is believed to be in good condition, a conclusion

supported by the encouraging fish population data of recent years. The addition of large quantities of large woody debris (LWD) resulting from the fire should further improve fish habitat in coming years by trapping sediment, creating additional pool habitat, and enhancing overall habitat complexity. The Flathead National Forest is also planning a study of westslope cutthroat trout distribution and genetic status, which should be implemented in the near future if funding is available.

**#354 Public Concern: The Flathead National Forest should propose activities to increase large pool habitat in the lower sections of Big Creek.**

Thank you for the good discussion of existing fish habitat conditions (page 3-26) that indicates that pool frequency and width/depth ratios are the primary habitat measures that are impaired in Big Creek. It is noted that large pool habitat in Big Creek is stated to be "poor" and the average width/depth ratio was 30, indicative of bedload widening of the stream (pages 3-231, 3-232). Over time we would expect that with improved watershed protection and reduced sediment delivery the width/depth ratio may correct itself as bedload moves through the system. It is our understanding that placement of large woody debris in the headwater areas of Big Creek and its tributaries will be carried out to increase pool habitat in these area (this is one of the recommendations in the Big Creek Water Quality Restoration Plan). Can anything be proposed to address the apparent lack of large pool habitat in lower sections of Big Creek?

**Response:** Lower Big Creek has historically functioned primarily as a migratory corridor for bull trout and westslope cutthroat trout. A survey currently being conducted by a Forest Service crew identified 12 pools greater than 1 meter deep in the first approximately two miles of Big Creek. Unlike in upper Big Creek where large woody debris is the primary pool-forming mechanism, the majority of the pools in the lower reach are associated with bedrock controlled channel features. The lower reach of the stream has a higher gradient than the middle reach where most bull trout spawning occurs. The greater stream power of this reach would make it difficult to establish additional pools using LWD. A bull trout biologist with the MDFWP who is well acquainted with Big Creek does not believe that habitat manipulation is warranted in lower Big Creek at the present time (Tom Weaver, MDFWP, personal communication).

**#355 Public Concern: The Flathead National Forest should not remove natural log jams unless removal will result in an overall beneficial effect.**

We appreciate the discussion of logjams directing stream flows against stream banks (page 3-183). We support the planned effort to evaluate the logjams on-site with the Montana Dept. of Fish, Wildlife, and Parks. Although we caution against tampering with these natural log jams unless there is a strong belief that removal of log jams will result in an overall beneficial effect. We are concerned about unintended adverse consequences of removal of these log jams (e.g., movement of logs downstream causing unknown effects, release of trapped sediments, disturbances to riparian vegetation during removal, removal of logs providing aquatic habitat, etc.).

**Response:** The project fisheries biologist and hydrologist toured the area with three biologists from the Montana Department of Fish, Wildlife, and Parks on September 3, 2002 to discuss possible restoration/prevention actions. The determination was made that Big Creek is functioning normally and intervention into channel processes is not warranted at this time. We will continue to monitor the stream in the coming years to insure that barriers to fish passage do not develop, however, we do not anticipate removing any logjams solely to prevent channel migration. If barriers to fish passage do develop, which is unlikely, we will evaluate the situation with fisheries biologists from Montana Fish, Wildlife and Parks and attempt to restore passage without removing any LWD from the channel.

**#356 Public Concern: The Final EIS should discuss the effects of fire removing "problem" log jams.**

We note that we were advised during a July 31, 2002 field trip that many "problem" log jams that may have directed stream flows against stream banks burned during the fire. If this is true, this fire effect on removing "problem" log jams should be incorporated into the EIS discussion.

**Response:** The large logjams that burned in the fire were located primarily in the lower gradient reaches of Big Creek in the vicinity of Elelehum Creek. That reach of stream appears to have undergone little change following the high flows of spring, 2002. Bedload previously trapped behind these debris dams will resume its migration down the watershed, however the large influx of new LWD resulting from the fire should help stabilize the stream. Field reviews in the spring, summer and fall of 2002 identified no significant channel migration following the high flow period in 2002.

**#357 Public Concern: The Final EIS should remove timber from all streambeds to improve fish habitat.**

Install a condition of the burned timber salvage contracts to remove timber from all streambeds for fish habitat improvement.

**Response:** As recently as the 1950's, removing woody debris from streams to improve fish habitat was a standard practice in the western United States. However, modern fisheries science has come to recognize the vital role played by large woody debris in creating and maintaining quality fish habitat in streams and rivers. See page 3-225 of the DEIS for a brief discussion of the role of downed trees in streams. This discussion is reiterated in the FEIS.

**#358 Public Concern: The Flathead National Forest should ensure that riparian areas will be identified and that adequate riparian buffers are provided.**

How will you assure the public that riparian areas will be identified and that "appropriate" riparian buffers are provided?

The Forest Service rightly chooses to buffer streams (thank you!) but neither the DEIS analysis nor INFISH guidelines sufficiently analyze what is an adequate buffer in a post-fire environment, particularly given varying slopes, aspects, soil types, fish habitat below these areas, etc. Much of the topography of the area has steep slopes that were heavily burned. These probably warrant additional protection, that is not analyzed in the DEIS. INFISH seems to anticipate forested environments, not areas burned as heavily as the Moose areas. Therefore the Forest Service should analyze the actual demonstrable buffering requirements to insure that harvest and other activities do not impact native fish.

**Response:** An experienced crew of professional foresters working closely with the project fisheries biologist will delineate the riparian buffers. INFISH regulations specify minimum buffer widths and require buffers be expanded to reflect site-specific criteria such as landslide prone areas or steep gorges adjacent to ephemeral channels. The fisheries biologist will monitor harvest unit layout and salvage activity to insure the adequacy of riparian buffers, and expand those buffers if necessary.

**#359 Public Concern: The Flathead National Forest should ensure that moist sites will be identified and protected from logging.**

Will moist sites be located at times of the year and weather conditions when they are most likely to be detected (DEIS 2-8)?

**Response:** The project area was surveyed and wetlands identified during the spring and early summer of 2002. The combination of a late snowmelt and a wet spring insure that any potential wetlands would have been apparent during the layout period. Monitoring of harvest units would continue throughout the project life and any additional wet areas that were missed in the initial survey would also be afforded buffer protection.

**#360 Public Concern: The Flathead National Forest should increase the minimum buffer zone for intermittent streams to 150 feet.**

The setbacks from riparian zones (100' on intermittent, 150' on non-fish bearing, and 300' on fish bearing) are a definite improvement, and we recommend increasing the minimum to 150 feet for intermittent streams as well. As you know, even these areas often have considerable subsurface moisture and support important riparian vegetation. In the extensively burned Moose Fire area, these may provide some of the most important security and linkage zones for a wide variety of species.

**Response:** The INFISH buffer widths specified in table 3-88 of the DEIS are minimum widths and they would be expanded as needed where the topography warrants. For instance, the standards require that ephemeral channels be buffered to the top of the inner gorge, regardless of distance. Alternative 4 would expand the buffer width on ephemeral streams to 300’.

**#361 Public Concern: The Final EIS should include 300-foot Riparian Habitat Conservation Area widths for all alternatives.**

I like the RHCA width of 300 ft provided by Alt. 4 and believe it should be applied to all alternatives.

**Response:** The National Environmental Policy Act (NEPA) requires that the Forest Service explore a range of alternatives when formulating management plans for public forestlands. Regardless of which alternative is ultimately chosen for this project, the responsible official can choose components of any alternative to incorporate into the decision.

**#362 Public Concern: The Flathead National Forest should permit salvage logging in riparian areas.**

During the scoping period there was consideration for salvage harvest in the riparian areas. This was good management! This harvest has been scrapped. A 300 foot no touch zone on each side of the stream is not good for the stream, the fisheries, the water quality or the health of the forest. Allowing nature to take its course can hardly be considered the-best course of action. Healthy stands of grass, forbs, shrubs and trees will do much more to protect these stream areas than a hands off approach.

Include commercial timber salvage as part of the integrated pest management strategy within SMZ areas. Salvage of timber within the riparian areas could be done using low ground pressure forwarder or skyline cable system (Little Wolf Fire Salvage, Tally Lake R.D.), thereby reducing soil and sedimentation concerns and alleviating the safety problems of helicopter operations and snags and woody debris necessary for riparian areas. (Wood Products Industry/Association, Kalispell, MT - #19) Salvage of timber within the riparian areas could be done by helicopter, thereby reducing soil and sedimentation concerns. Even if the harvest activities were prescribed to the maximum allowable under the State of Montana Streamside Management Zone regulation, more than adequate levels of woody debris would remain to meet fisheries objectives.

Fisheries Page 3-224 to 3-252: "The effect upon fish populations of extensive mortality among these large riparian trees is unlikely to be negative . . . The death of large numbers of trees within riparian zones generally should not have catastrophic consequences for fish." DEIS Page 3-236—effects of tree death from bark beetles. This will be an analysis worth remembering the next time a regular timber harvest project is proposed. We strongly disagree and believe that the death of these riparian forests will have a significant negative effect upon fish populations. We urge that you minimize negative effects to fish by capturing the spruce beetles with immediate salvage harvesting in these riparian areas. To do otherwise is to jeopardize adjacent, unburned spruce forests that provide critical functions for fish.

There is a lot of concern about the decision to not salvage timber in INFISH buffer zones and riparian areas. We all agree that riparian areas are very sensitive areas and should be treated very carefully, but the timber stands within these riparian areas must still be managed using timber harvest as a viable management tool. Riparian areas need management to maintain and improve forest health and productivity. One major reason given for deferring timber harvest in INFISH buffers and riparian areas is potential sediment delivery to bull trout fisheries. The DEIS in Appendix D-5 states "The WEPP model predicts the fire will produce 125,000 tons of sediment." Salvage activities are very minimal. There would also be more than enough large woody debris recruitment for the streams even at minimum levels of tree retention in the Montana Streamside Management Zone Law. I also disagree with the statement that there is never too much woody debris in a stream. Too much debris in a stream can create stream blowouts that can create additional erosion. Riparian areas need active management like any other forested lands.

Fuel accumulations will not be addressed in these riparian areas without salvage logging—failing to meet Need # 3: Reduce future fire risk and hazard by reducing fuel accumulations. . . . High concentrations of downed spruce trees are located in the riparian areas of the Big Creek valley bottom upstream from the Big Creek Campground and the Glacier Institute Complex. If a fire were to burn into these fuel accumulations, fire suppression actions would likely be unsuccessful and structures would be threatened, along with the associated risk to human safety. DEIS Page 1-9, by the same rationale, is it not logical that the "high

concentrations of downed spruce"—of which there are many more now after recent winds and will be many more in the near future—should be removed to reduce this same risk to wildlife and fisheries resources? Please include a risk assessment and rationalization for this decision and illustrate the cumulative effects that can be expected if such a re-burn were to occur in these riparian areas in the future.

**Response:** The initial proposal for management of the Moose Fire included harvest of at risk spruce trees in the riparian zones of the fire area to reduce the risk of bark beetle damage to healthy trees. This component of the proposal was dropped, and instead the use of alternative beetle control measures is proposed for riparian areas. This change was made for the following reasons:

- ❑ Information gained from intensive field evaluations this past winter, which revealed fewer acres of spruce at high-risk to bark beetle than were originally estimated.
- ❑ Analysis that confirmed the high cost and complexities of logging on these sensitive sites and often isolated patches of timber
- ❑ A high level of concern from oversight agencies and many members of the public regarding the potential effects of logging riparian habitat on the threatened bull trout.
- ❑ Consultation with entomologists determined that non-salvage treatments have a good chance of containing the limited infestation expected.

### **#363 Public Concern: The Flathead National Forest should reduce fuel loading in riparian areas.**

Snags and downed wood habitat Page 3-143 to 3-153: Further indication of increased fuel loads is documented in this chapter under the direct and indirect effects of Alternative One: "Most areas modeled as high-quality downed wood habitat are expected to have 150 to 200 tons per acre of large-diameter downed trees. The exception would be some areas of riparian spruce bottoms along Big Creek that ALREADY (emphasis added) have 80 to 200 tons per acre down. Moderate-quality areas are expected to have 100 to 150 tons per acre of large-diameter downed trees. Page 3-147 DEIS. This further illustrates the need to reduce fuel loading across the project area, particularly in riparian areas. (Wood Products Industry/Association, Kalispell, MT - #1200) Chapter 1, Page 6, states "The proposed action originally provided to the public for review in January 2002 was modified in two ways." And "These changes were influenced by:" and "A high level of concern from oversight government agencies and many members of the public regarding potential effects of logging on riparian habitat values to the threatened bull trout." These statements do not even consider that the noted Bull Trout Habitat and the riparian zones that support them have been or are completely saturated with fire related particles such as ash and sediment. If the streambed areas are left with dead or dying trees standing around them, the trees will blow down in the next few years possibly exposing tree roots and thus dumping more sediment into the habitat just as it is starting to recover from the fire event. This proposed no action in the extended riparian zones will not only be a detriment to the streams but the resulting blow-down will reduce recreational opportunities to fish these areas.

**Response:** Bull trout have long been adapted to fire throughout their range, including the populations in the upper Flathead Basin. There is little evidence that even severe fire has serious consequences for bull trout populations, and fire may benefit these fish in several ways, including increasing the recruitment of large woody debris into the stream. Recent surveys in Big Creek indicate that bull trout numbers are at their highest level in many years within the watershed. The standards and guidelines of INFISH promote allowing natural processes to govern the response of riparian areas to disturbance. See also the response to comment # 362 above.

### **#364 Public Concern: The Final EIS should acknowledge that streamside logging does not impact fisheries.**

Fish will always come back to their birth stream even if logging is done up to the edge of the stream. Properly managed logging by streams will not pollute the stream.

**Response:** The primary concern relative to bull trout and streamside logging is not whether the fish will return to their natal streams, but rather the quality of the habitat once they arrive. See also the response to comments # 362 and # 363 above.

**#365 Public Concern: The Flathead National Forest should prioritize road decommissioning and watershed restoration rather than logging.**

Duration of Activities: It appears that bull trout and other species are at serious risk now while road decommissioning work/watershed restoration work will be delayed until 2009. How long will it take to complete the proposed road closure/decommissioning work (DEIS 2-8)? How long is road closure/decommissioning work to be delayed in order to carry out the logging operations planned here? What new sediment impacts/impacts to wildlife security will logging operations and use of roads create while road decommissioning and watershed restoration wait? The top priority of the FS should be protecting TES species here; it appears that timber extraction is a higher priority leading to delays in other needed TES species conservation-related activities.

**Response:** Road decommissioning work would begin in 2003 and continue until 2009 based upon current funding levels and the schedule of road decommissioning provided to the U.S. Fish and Wildlife Service. If additional funds become available the work could be completed sooner. The BMP project discussed on page 3-247 of the DEIS is currently being implemented, and many high risk culverts have already been replaced, reducing the risk of failure with its associated sediment concerns. The potential impacts of all project activities are discussed in the hydrology and fisheries sections of the DEIS and FEIS. The constraints on decommissioning activity are based upon available funds and not upon a timber harvest timetable.

**#366 Public Concern: The Flathead National Forest should halt salvage operations if water quality standards are violated.**

My main concern as I previously stated is to maintain water quality for the area's fishery of bull trout and cutthroat trout. Alternative 2 has the highest sediment load but I trust it is still low enough to protect the fishery. I urge you to have enough ground supervision to insure that the impacts to water quality are kept to a minimum and within the guidelines to necessary to protect fish. If the water quality standards are violated you should retain the authority to stop the salvage operations.

**Response:** Close consultation with Montana Department of Environmental Quality employees has occurred throughout the planning for the Moose Post-Fire Project. This included a field trip, numerous personal conversations, preparation of a draft TMDL, and review of the DEIS. The timber sale administrator has the authority to modify or halt logging activity if water quality is being compromised. The Flathead National Forest will continue to monitor bull trout populations within the watershed, as well as the quality of their spawning and rearing habitat. The fisheries biologist will monitor project activities to insure impacts to bull trout are minimized to the maximum extent possible. Timing of activities will be designed to protect bull trout reproduction.

**#367 Public Concern: The Flathead National Forest should not permit clear-cutting where it could cause stream sedimentation.**

The minimal data on post-fire harvest activities (see e.g. Beaverhead Salvage DEIS, June 2002, p. 3-182): The lack of data underscores the importance of the Forest Service acting most conservatively in riparian areas. Clear-cutting should not occur any place that sediment could reach a stream. This is required for 303(d) listed streams and necessary to protect sensitive fisheries throughout the Forest. Areas where clear-cutting is considered should be considered on a case-by-case basis to assess slope, aspect, soil type, etc., to determine just how much buffer is necessary to insure that sediment can not impair water quality. Clear-cutting should especially not be allowed in any riparian area because activities in these areas will likely lead to sediment loading. Even helicopter logging will have impacts, which are acknowledged to last for two years or more. Harvest impacts should be eliminated in 303(d) watersheds or areas that could support sensitive species such as westslope cutthroat trout.

**Response:** No harvest activity will take place in riparian areas, as stated in the DEIS and FEIS. Buffer widths will comply with, or exceed, INFISH standards and are believed adequate to protect water quality and fisheries. Clear-cutting will not take place in the project, i.e., no stand will be changed from mature to stand initiation status. In addition, all proposed harvest methods would leave trees within units. Complete stem removal is not proposed.

**#368 Public Concern: The Flathead National Forest should ensure appropriate culvert management to minimize adverse fisheries effects.**

EPA's general areas of concern regarding roads (including temporary roads) include the number of road stream crossings; road drainage and surface erosion, interception and routing sediment to streams; culvert sizing and potential for washout; culvert allowance of fish migration and effects on stream structure; seasonal and spawning habitats; large organic material supplies; and riparian habitats. Culverts should be properly sized to handle flood events and should be properly aligned with the stream channel. Undersized culverts should be replaced and culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration should be adjusted. Open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows and bedload are recommended to minimize adverse fisheries effects of stream crossings.

The DEIS describes future culvert work in the forest. These activities are intrinsically intertwined with activities such as the proposed timber harvest and the two actions should be considered together. If the Forest Service declines to join the actions where they overlap or could have cumulative or related impacts, then the DEIS should consider culverts in all areas proposed for harvest actions and analyze whether or not culverts are adequately protecting water quality and providing adequate fish passage. Where such analysis determines that culverts are not meeting these goals, the agency should implement necessary restoration.

**Response:** The Flathead National Forest has conducted an extensive inventory of the road system in the watershed. The BMP project, described on page 3-247 of the DEIS and in Chapter 3 of the FEIS, is currently underway and many culverts that were identified as undersized or otherwise at risk have been upgraded to handle the 100 year flood as required by INFISH. When possible, culvert replacement is scheduled when ephemeral channels are dry to prevent sediment delivery. At wet sites, streams are diverted and other methods are employed to minimize sediment delivery. The temporary roads that were proposed in the DEIS have been dropped, and are no longer part of this project. Much of the BMP culvert work is taking place above the fire area in the headwaters of the drainage and is not related to the salvage harvest, but rather is intended to reduce the risk of future sedimentation of bull trout spawning habitat. Culverts identified as fish passage barriers are being replaced, in most cases with bottomless arch type pipes or bridges.

**#369 Public Concern: The Final EIS should outline and assess the adequacy of protective measures for all resident inland native fish species, especially bull trout.**

We are seriously concerned about the effects of this sale on Bull Trout populations in the area, especially in a post-fire situation. According to the BAER report, Moose Fire, Big Creek and Coal Creek which run through the project area, "represent up to 35% of the bull trout spawning habitat in the Flathead System" (P.2). The FS must explicitly outline what measures it will take to protect any and all resident inland native fish species, with special concern given to Bull Trout populations and explain whether these will be adequate. Specifically, we request that Riparian Habitat Conservation Area buffer widths be defined. Those contained in the current Stream Management Zone (SMZ) laws are totally inadequate for the protection of Bull Trout. The DEIS must also include a discussion of current habitat conditions, including but not limited to Woody Debris Recruitment, Pool Frequency, water temperature, turbidity, dissolved oxygen levels, and other factors relating to Bull Trout habitat. Furthermore, the analysis must disclose how the proposed project will effect Bull Trout and Westslope Cutthroat Trout meta-populations. In the case of Bull Trout this is especially important, given this species' need to migrate out of spawning/rearing habitat. No action should occur which will negatively impact Bull Trout populations.

**Response:** See the fisheries section of the FEIS for a discussion of these issues.

**#370 Public Concern: The Flathead National Forest should decommission roads near bull trout habitat with extreme caution.**

Closing roads near bull trout habitat should be done with extreme caution. Any sediment added to already impaired streams could substantially impact this species. I support obliteration on the beginning of these roads in order to prevent user access.

**Response:** All road decommissioning work will be done in a manner designed to minimize sediment delivery to streams, including the use of measures such as silt fencing and stream diversion. The fisheries biologist will monitor culvert removals to insure that all possible erosion control techniques are employed.

**#371 Public Concern: The Final EIS should analyze impacts to all native fish, especially westslope cutthroat.**

The DEIS analyzes fisheries primarily from the bull trout point of view. The DEIS does not sufficiently demonstrate that this sufficiently considers impacts to other native fish. The Forest Service should fully analyze impacts to all native fish, especially westslope cutthroat trout, and not simply use bull trout as an indicator species. This is especially important for westslope because INFISH, westslope-related MOU's and westslope recovery plans and strategies do not anticipate the post-fire environment in their analysis or recommendations. This comment is supported by the MOU and Conservation Agreement for Westslope Cutthroat Trout in Montana. That document does not allow negative effects and promotes beneficial effects on westslope cutthroat populations. The proposed actions will negatively affect populations by degrading waters needed to establish populations and increase population ranges. That genetically pure westslope populations have decreased by 97% and 90% of the remaining populations have a high to very high risk of extinction demonstrates the need to expand habitat to prevent the extinction of the remaining populations. The westslope cutthroat trout analysis is flimsy at best, primarily relying on bull trout populations as its indicator species. But the DEIS identifies different or unknown causes as impacting the two species. The Forest Service should therefore further analyze westslope species health and impacts (and their sources). The Forest Service should insure that viable habitat is expanded beyond the currently defined areas. Moreover, the DEIS acknowledges that "Relatively little is known about the populations of the other aquatic species native to the streams in the Big Creek Watershed." This deficiency should be corrected before the Forest Service takes further actions in this drainage that could possibly impact individual fish, their habitat, or fish populations.

Please disclose in the NEPA document the results of up-to-date monitoring of fish habitat and watershed conditions, as required by the Forest Plan. Disclose what populations of westslope cutthroat trout, bull trout and other state and federal listed aquatic species exist in the area. Disclose potential impacts to these species.

**Response:** Bull trout are currently the only ESA listed aquatic species found in the project area, and must therefore receive special consideration during project planning and implementation. Because bull trout have been a keystone species in this environment for thousands of years, most issues pertaining to the health of bull trout populations must of necessity apply to other native aquatic species as well. For a further discussion of westslope cutthroat, please refer to the westslope cutthroat Biological Evaluation (BE) in the project record. The one factor that appears to have affected cutthroat differently than bull trout in the watershed is possible hybridization with non-native species, namely rainbow trout. The Moose Post-Fire Project will not contribute to hybridization between the species, and the Flathead National Forest is exploring opportunities to better determine the degree of hybridization that exists in the Big Creek watershed.

The most recent monitoring data for fish populations and stream condition in the watershed is discussed in the Fisheries section of the FEIS. In general, all available data collected this year indicates that fish populations and habitat conditions are continuing to improve.

### **Air Quality, Heritage Resources, and Visual Resources**

**#372 Public Concern: The Final EIS should retain proposed compliance with the Montana/Idaho State Airshed Group Smoke Management Program schedule for burning during weather conditions favorable for smoke dispersion.**

Pile and jackpot slash burning associated with harvesting operations is proposed, and as you are aware, smoke from such burns contains air pollutants, including tiny particulates which can cause health problems, especially for people suffering from respiratory illnesses, and can reduce visibility and diminish the appreciation of scenic vistas. Particulate concentrations that exceed health standard have been measured downwind of burns. We are pleased that proposed burning will be carried out in cooperation with the Montana/Idaho State Airshed Group Smoke Management Program that schedules burning during weather

conditions favorable for smoke dispersion. Conduct of burning in accordance with the Montana/Idaho Airshed Smoke Management Program is consistent with the Federal Interim Air Quality Policy for Wildland and Prescribed Fires. . . . We are pleased that the DEIS acknowledges that there may be unintentional short-term impacts from smoke. . . . While smoke from proposed prescribed burning may impact air quality and visibility in Glacier Park we also recognize that these effects will be minimized by carrying out burning during periods of good smoke dispersion.

**Response:** The FEIS includes a section on air quality that concludes that the action alternatives would comply with the Montana/Idaho State Airshed Group Smoke Management Program schedule

**#373 Public Concern: The Final EIS should ensure adequate surveys for heritage resources prior to implementation.**

Do the design criteria provide for adequate pre-implementation surveys for heritage resources (DEIS 2-8)? Waiting until implementation would not be adequate.

**Response:** Surveys took place in July 2002 and are described in the FEIS.

**#374 Public Concern: The Forest Service should quickly repair visual impacts from the Moose Fire.**

I think that Moose Fire area is a major eyesore and anything that can be done to clean it up, including logging, should be done. The sooner a decision is made, the better.

**Response:** Fire is an important ecological force that nearly all terrestrial ecosystems in North America have adapted to or experience. Fire has been present through evolutionary time periods and as a result adaptations to fire are found in the vegetation systems we manage. Fire has historically altered the visual landscape character in both the short and long term perspectives. Snags, burned areas and the effects of the Moose fire will be visible from many viewpoints for many years. Natural revegetation will start to screen views of much of the disturbed areas in a relatively short period of time. In the long term, the effects of the fire will add interest and diversity to the landscape because areas of different size and ages would result. Different vegetation structures will occur in a mosaic pattern across the project area.

**#375 Public Concern: The Final EIS should articulate prescribed mitigation for the visual impacts of logging.**

How would skid trails, landings and other logging infrastructure be rehabilitated sufficiently in order to completely mitigate visual impacts (DEIS 2-10)?

**Response:** Many of the proposed salvage units have had some logging system changes since the DEIS was published. These changes are reflected in the FEIS. Proposed units adjacent to open roads have mostly been changed to winter log or helicopter systems. In addition, helicopter systems are prescribed for the majority of all the proposed salvage units. The DEIS on page 3-267 states that “yarding logs via helicopter creates minor ground disturbances and therefore shows little impact to the visual resource.” Although we plan to minimize visual impacts from proposed salvage treatments as much as we can, it is impossible to “completely” eliminate any sign of logging. In Chapter 2 of the DEIS and the FEIS, we identified specific design criteria that should reduce visual impacts: reducing stump heights adjacent to open roads, disposing of burn piles as soon as possible, and rehabilitate lands next to open roads. In addition, skid trails and skyline corridors would be rehabilitated (refer to Appendix C, page C-6).

## **Recreation**

**#376 Public Concern: The Flathead National Forest should develop a public awareness campaign explaining fire impacts in the Big Creek area.**

A public awareness campaign coupled with an active, interpretive and scholastic component should be developed for the Big Creek area of the Moose fire. The forestland that burned in the Moose fire is not unlike the human body of a burn victim. Just as people would understand the utmost care given to a human burn victim under the circumstances, so too must it understand this relationship with this land. This may be the only circumstance under which the public would agree to preclude itself of some of its former activities in this drainage.

**Response:** Such a campaign would benefit many people. Our environmental education specialist is quite interested in pursuing some future projects, research, and studies related to the fire. However, your ideas are not within the scope of this project, so, if this happens, it would occur as part of another project.

**#377 Public Concern: The Flathead National Forest should prohibit motorized trail bike access to trails 194 and 255.**

Motorized trail bike access on trails 194 and 255 should be eliminated altogether. The DEIS admits these trails receive low levels of motorcycle use. Deleting motorized access on these trails through the area not only benefits grizzly bear security, but it could help mitigate some of the conflict between the Winter Recreation Agreement and Amendment 19 requirements.

**Response:** A review of these trails shows that they are located in grizzly bear security core area. According to the Flathead Forest Plan, no motorized use is allowed during the non-denning period in security core area. Therefore, these trails will be closed to motorized use during this period. The FEIS has been updated to reflect this change.

**#378 Public Concern: The Final EIS should analyze the negative impacts of displacing motorized use.**

Recreational opportunities will be severely limited by the proposed road closures and road decommissioning. At a time when recreational use is increasing at a dramatic rate, road restrictions create more concentrated use on smaller areas and also shift more recreational use on Stoltze lands along with the problems that result from increased use. The Forest Service cannot continue to lock up their lands to motorized use without serious consequences to other lands. (Wood Products Industry/Association, Columbia Falls, MT - #22)

**Response:** We acknowledged that reducing motorized recreation opportunities on the Forest could displace users to open concentrated areas or on to private lands. In the recreation section in Chapter 3 of the FEIS we state that: "[t]hose seeking motorized opportunities as road restrictions and decommissioning work is implemented. Those seeking motorized opportunities would be displaced and, in many cases, concentrated in the remaining open areas. In the North Fork, some displaced users can be expected to move into the Wild and Scenic River corridor. Others may be displaced to unrestricted private, state or other federal lands. Action alternatives may also reduce access for some non-motorized users as gated and bermed roads are decommissioned and access for stock, mountain bikes, etc. becomes more difficult as vegetation grows in."

**#379 Public Concern: The Flathead National Forest should prohibit snowmobile use on roads proposed for decommissioning.**

Road decommissioning is positive restoration work. Decommission and restrict snowmobiles on at least 87 miles of road.

**Response:** It is beyond the scope of this decision to restrict snowmobiles from the project area. A recent settlement agreement from a lawsuit challenging the Forest Plan resulted in temporary closure orders to snowmobile use in some portions of the project area. Permitted snowmobile use is allowed in other parts of the project area – e.g. along some roads and in some play areas. A Draft Environmental Impact Statement is currently being prepared for the Winter Motorized Recreation Forest Plan Amendment, a proposal to amend the Forest Plan direction related to

winter snowmobile use. Limiting snowmobile use in the Big Creek drainage is most appropriately addressed in the ongoing Winter Motorized Recreation Forest Plan Amendment.

**#380 Public Concern: The Flathead National Forest should recognize that snowmobile use in areas 41, 42, 75, and 76 could be problematic.**

Alt. 2 and 5 Map. Cutting units 41 and 42, 75 and 76, have the potential to become snowmobile play areas after harvest activities. Not good!

**Response:** All four units are too steep for snowmobile use. Also, units 75 and 76 will have many standing trees left, which would make snowmobile use prohibitive. At this time, snowmobile use is prohibited in these areas.

**#381 Public Concern: The Final EIS should eliminate snowmobiling where it is incompatible with road decommissioning.**

Issue 11 [Decommissioning road activities may not be compatible with snowmobiling on existing snowmobile routes.]: True. Thus reduce snowmobile mileage.

**Response:** See response to comment #380.

**#382 Public Concern: The Flathead National Forest should clarify how it will enforce seasonal snowmobile restrictions.**

The myth that snowmobiles are hurting nothing because they operate on 10-20 feet of snow is shown to be exactly that—a myth—as snowmobiles are tearing up the countryside with little regard for adequate snow pack or seasonal wildlife security closures. This is especially true when snowmobilers do not have to rely upon adequate snow pack and naturally occurring snow bridges to cross streams swollen by spring runoff. Spring should signal an end to the snowmobile season. Leaving culverts or bridges in place would create even more of an enforcement nightmare as natural impediments to springtime snowmobile travel are replaced with, at best, seasonal restrictions printed on paper. Our recent conversations with Ranger DeHerrera and members of his staff indicate they were unaware of the unauthorized Lost Johnny bridge that we have suspected for some time and looks to have been in use for a number of years. If the Forest Service doesn't have the ability to locate and remove such unauthorized structures, how are we to believe it has the ability to enforce seasonal restrictions on snowmobiling once it has left culverts or benched trails in place that would encourage off-season use?

**Response:** Refer to the response to comment #220. The Flathead Forest has stepped up its snowmobile monitoring program and will be adding employees to monitor snowmobile use and make visitor contact starting in the winter of 2002-2003. Education and enforcement will take place as needed to deal with identified problems. The Lost Johnny Bridge referenced is not located anywhere near the Moose Fire area. Contrary to this comment, the bridge was not “unauthorized” and Forest officials have been aware of this bridge for at least 20 years. The area around the bridge is and has been open to snowmobile use. The structure is currently being evaluated.

**#383 Public Concern: The Flathead National Forest should maintain and improve snowmobile opportunities.**

Snowmobiling, a family oriented sport with very low impact on the environment, is a winter recreational activity well suited for our area on the roads and trails of the Flathead Forest. The Flathead needs to continue the snowmobile program and look for ways to expand and improve the grooming program.

**Response:** Expanding and improving the grooming program is outside the scope of this project. However, the Flathead National Forest currently is preparing a draft environmental impact statement for a winter motorized recreation amendment to the Forest Plan, which will direct use related to winter snowmobile use. The comment period ended August 26, 2002. Please address future comments to this project.

**#384 Public Concern: The Flathead National Forest should reconsider year-long closures of the Trumble Creek and McGinnis Creek roads.**

I would like to comment on the road closures on Trumble Creek and McGinnis Creek. First, it's dangerous to not have an alternate route out of the woods in case of another forest fire. Secondly, it appears to me that bears have more rights than humans. I'm a berry picker and I love to get out into the woods and gather huckleberries. The road closures are putting a greater population of people into smaller areas of the huckleberry patches. If you must keep these roads closed . . . would you consider opening them for berry picking season?

**Response:** Neither road is within the project area, so any road management issues for these roads are outside the scope of this project.

**#385 Public Concern: The Final EIS should increase road density to reduce recreation congestion in arterial travel corridors.**

Page 6 calls for modifying the road densities. If road densities can be adjusted, I contend that due to traditional uses, road densities should be increased marginally to allow diversified winter travel to reduce recreation congestion in arterial travel corridors.

**Response:** We cannot increase road densities in either of the two grizzly bear subunits within the project area. Neither subunit meets the guidelines set under Amendment 19 for road densities. As a result, we must decrease road densities. However, we have proposed the road management option under Alternative 3 to respond in part to your concern (See page 2-27 through 2-28 of the DEIS, and the FEIS).

**#386 Public Concern: The Flathead National Forest should implement Alternative 4 consistent with the Winter Recreation Agreement.**

Alternative 4 is the most protective of choices while allowing a modicum of timber salvage. In the best interests of all, Montana Wilderness Association supports a modified Alternative 4. The modifications that Montana Wilderness Association would suggest include: The conditions of the Winter Recreation Agreement be implemented.

**Response:** Your comments supporting Alternative 4 with modifications will be considered by the decision maker.

**#387 Public Concern: The Flathead National Forest should fully implement Amendment 19.**

Amendment 19 has yet to be fully implemented on the Flathead National Forest. The Forest Service for various reasons (social, political, financial) has moved less than expeditiously on this score. It completely neglected to consider or incorporate its responsibilities in this respect when it negotiated with the Montana Wilderness Association and the Montana Snowmobile Association the Winter Recreation Agreement. However, Montana Wilderness Association supports the terms and conditions negotiated in the Winter Recreation Agreement.

Full implementation of Amendment 19 is overdue and required to provide adequate wildlife security. No exceptions! Do not reopen Road 316. Providing culverts and helping maintain access for snowmobiles on decommissioned roads per the Montana Wilderness Association agreement violates Amendment 19!

**Response:** Full implementation of the Forest Plan's road density standards would occur under Alternatives 2, 4, and 5. A portion of Road 316, which is currently closed to wheeled motorized access, would be left closed under Alternatives 2 and 4 and is proposed to be seasonally opened under Alternatives 3 and 5. Leaving a limited number of stream-aligned culverts (approximately 10) on proposed decommissioned roads to allow for continued snowmobiling use would occur only in Alternative 3. This alternative would not violate the Forest Plan because a project-specific amendment would temporarily modify the forest plan to allow these 10 stream-aligned culverts to remain in place after being appropriately sized, and to allow Road 316 to remain open on a seasonal basis.

**#388 Public Concern: The Flathead National Forest should recognize that road closures cause unhealthy and expensive lifestyles.**

Road closures made some sense at first, with new logging roads and an occasional road here and there. It has now reached a point of insanity! No wonder our young people and families are having a hard time finding things to do. You are driving people to unhealthy pastimes when they cannot go to the forests for day trips and picnicking. Most families cannot afford entertainment in town or expensive campgrounds.

**Response:** We understand and sympathize with your concern. Most of us who work for the Forest Service also recreate within the Flathead National Forest. We, too, must find alternative places to go to or alternative means of getting to places when we can no longer drive along a favorite road. However, we have no choice but to close roads to wheeled motorized vehicles because of requirements under Amendment 19. Amendment 19 provides a long-term conservation strategy for grizzly bear security within the Flathead National Forest. Refer to page 2-20 of the DEIS for an explanation of Amendment 19 requirements based on the U.S. Fish and Wildlife Service's biological opinion.

**#389 Public Concern: The Flathead National Forest should decommission roads that are sources of sediment to Big Creek and its tributaries, and that are necessary for grizzly bear habitat and security.**

It may be reasonable to allow some roads that are proposed for decommissioning or more severe access restrictions in Alternative 4 to remain seasonally open to make the selected alternative more acceptable to the public, although EPA does support obliteration or decommissioning of the roads that are sources of sediment to Big Creek and its tributaries, and that are necessary for grizzly bear habitat and security needs.

**Response:** Amendment 19 of the Flathead Forest Plan prohibits motorized use of decommissioned roads during the non-denning season. Some of these roads would remain open to snowmobile use, although culvert removal in Alternatives 2, 4 and 5 may preclude use.

**#390 Public Concern: The Flathead National Forest should allow access to Road 315.**

Leave Road 315 open—Hallowatt Creek was agreed to be left open to allow access to China Basin. Instead of amending the forest plan it should be revised.

**Response:** All alternatives except Alternative 5 provide summer road access, at least seasonally, and access would remain available to snowmobile use. The Forest Plan is currently being revised, but completion is at least four years in the future. There is a need to deal with these access issues in the interim.

**#391 Public Concern: The Flathead National Forest should allow access to Road 316.**

The closure of Road 316 represents total abandonment of the Forest Service creed of "Caring for the Land and Serving People." Road 316 is a strategic road for forest protection and public safety, forest management and recreation. I believe the Flathead National Forest is wrong to abandon all common sense and professional management discretion to blindly play numbers games as an excuse to destroy strategic public capital investments. I believe there is no reason why departures from the arbitrary and capricious road standards are not possible. Please restore some public credibility in the Flathead National Forest by maintaining Road 316 as a strategic link in the public road system.

We need to leave Road 316 open for access to Big Mountain's chairlifts, and to the snowmobile survival cabin to maintain it during the summer. The Forest Service will also need access to the cabin after they install the vault toilet there to pump it out.

I've seen the sunsets and sunrises from road 316. Bull moose in the morning's mist, he stood proud and bold. Bear tracks on the road in an August early snow. The huckleberries are bigger here than anyplace I know. Grizzly and black bears I've seen through this stretch. Monster mule deer, people have told it's far fetched. I remember a weasel that entertained me for awhile. Thousands of memories I've taken from these few short miles. Bugling bulls down from the tree line. I even saw a whitetail up

there with a drop tine. Over the years I've seen a lot of things. I know what that road means to me and the happiness it brings. I've traveled this road since I was old enough to drive. The scenery of its path makes me feel so alive. My son is three years old now and loves it outside. Look through his eyes on that road as we ride. See how simple it is, wild and free. Through a small child's eyes is how it should be. It's a special road that kicks up dust in my heart. Through my life it has played a big part. Most good things come to an end, for the road has been gated. I'm looking at my son and the tears have already started.

Road 316 has been a wonderful access route to views of fall colors, Glacier Park, and the Canadian Rockies for over 35 years. Road 316 affords excellent mule deer and whitetail hunting, moose hunting, elk hunting, grouse and bear hunting. Road 316 accesses some of the greatest huckleberry picking in the Flathead Valley.

**Response:** By far, more people have expressed concerns regarding this road in this project than with any other issue. Many people have expressed concerns about the closure of the upper part of Road 316, which occurred as part of the “terms and conditions” of the U.S. Fish and Wildlife Service’s biological opinion on the 1995 Big Mountain Ski and Summer Resort Expansion Project. Perhaps because the road closure was only partially closed to wheeled motorized use until last year, people did not realize the significance of the 1995 decision. Whatever the reason, many people now wish us to reopen the upper part of Road 316. As a result, we have proposed the road management options under Alternatives 3 and 5, which would seasonally open the upper reaches of this road. Alternative 5 would require closing the road to Moose Lake to compensate; Alternative 3 would require a project-specific amendment to implement this road management strategy. See Chapter 2 of the DEIS and FEIS for the alternative descriptions in detail.

### **#392 Public Concern: The Final EIS should close Road 316 to off-highway vehicle use.**

I support the decision to close Road 316 and I also support any and all reclamation of any Road 316 as well as any others in the North Fork. ATVs are seen to be one of the greatest threats to the integrity of this ecosystem. I support their use on open and improved roads only . . . . I have spent a lot of time up here as I live here and have seen an enormous amount of damage to public land by 4-wheelers and their illegal use. Huntsberger Lake is a prime example. I believe the more roads closed the better for the North Fork.

**Response:** We appreciate your comments about Road 316; the responsible official for making the decision on this project has the option of keeping the upper portions of Road 316 closed to wheeled motorized traffic under two of the action alternatives. Two of the other proposed action alternatives would open up the road for seasonal use to wheeled motorized access. The effects of opening or keeping this part of the road closed to wheeled motorized traffic has been evaluated in various portions of the DEIS, which in addition to public comments, will help aid the responsible official in making a decision.

### **#393 Public Concern: The Final EIS should identify the effects of closing Road 316.**

As native Montanans that are avid outdoors enthusiasts we are demanding that Forest Service Road 316 be reopened immediately. . . . Just exactly why has the road been gated? What is the real reason? Is it not one of the few roads giving us access to the backside of Big Mountain for fire suppression? Did fire crews not use Road 316 in 2001 in relation to the Moose Fire? If use is denied will the road not become overgrown and unusable? What possible benefit could there be to the public, the owners of this area, to close and destroy Road 316?

**Response:** Road 316 was one of several roads that were closed to wheeled motorized traffic to provide grizzly bear habitat security as a result of the expansion of ski runs into the Big Creek drainage. The Big Mountain Ski Area Expansion Record of Decision signed in 1995 authorized these road closures.

Road 316 was used during the fire suppression of the Moose Fire – the berm was taken out temporarily. The loss of roads and the effects on future fire suppression have been discussed in the DEIS on pages 3-93 and 3-94. As we mentioned under comment #392, the responsible official for making the decision on this project has the option of keeping the upper portions of Road 316 closed to wheeled motorized traffic under two of the action alternatives. Two of the other proposed action alternatives would open up the road for seasonal use to wheeled motorized access. The effects of opening or keeping this part of the road closed to wheeled motorized traffic has been evaluated in

various portions of the DEIS, which in addition to public comments, will help aid the responsible official in making a decision.

**#394 Public Concern: The Flathead National Forest should clearly mark the closure of Road 316.**

There has never been a "Closed" sign on road 316 since I got a fine of \$100.00 on it and yet it is closed. I guess we are supposed to have a sixth sense that a road is closed. Maps, well they're good if you can get them to show closed roads. My \$100.00 I feel was stolen from me. Give me my \$100.00 back and road 316.

**Response:** Road closure signs were installed at the closure devices on Road 316. However, vandalism has been common at this closure device and it is possible that the sign was removed when you were there.

**#395 Public Concern: The Flathead National Forest should reconcile restricting public access with Big Mountain skiing access.**

Open up the back side of Big Mountain Hell Roaring creek on the west for skiing and then block off the public. How much does Big Mountain pay you? Let a fire burn out of control and then use that as an excuse to block out the public. The public . . . pays your wages.

**Response:** See response to comment #394.

**#396 Public Concern: The Final EIS should address the potential for bear hunters to use snowmobiles in relationship to the seasonal closure of Road 316.**

(2-35) "In addition, Alternative 4 also proposes a seasonal closure to motorized access on the entire length of Big Creek Canyon Road 316 (on those portions currently open to motorized use) during the spring (April and May) until hiding cover has been established." This is a great idea, if the intent is to preclude bear hunters and hunting in a fashion that does not require Montana Department of Fish, Wildlife and Parks approval. However, the snowmobile season lasts until April 15, and bear hunters would not have a problem using snow machines as an alternative means of transportation. Unless the snowmobile season in the area also closed on March 31, that statement would not hold true.

**Response:** Restriction of motorized access on Road 316 during April and May in Alternative 4 was intended only to be within the fire area because of loss of hiding cover from the fire. However, because the only wheeled motorized access to Road 316 under Alternative 4 is from the junction with the North Fork Road and Road 316, the seasonal closure effectively closes off wheeled motorized access to the other portions of Road 316 outside the fire area. The FEIS has been clarified to state the above.

**#397 Public Concern: The Flathead National Forest should not close roads.**

We have lived in this beautiful area for many years and now in our retirement we would like to be able to enjoy all, and any, of the roads that are still open, along with the ones that have been closed!! We have paid many, many dollars in taxes to help with the maintenance of these roads and feel that no one has the right to close them. We can't walk the distances that would be needed to even get close to the areas we can access by our van or pickup. . . . The roads are already there and the cost to destroy them is another tax dollar lost, for no good reason. The public has the right to access all public lands! These public lands belong to the people, not some special group of environmentalists. (Individual, Kalispell, MT - #75)

I resent the pressure being dumped onto the U.S. Forest service to close (gate) or remove roads from public use, especially when it costs an average of 6,000 to 8,000 dollars per mile to build them. The purpose of these roads are: 1. administrative use; 2. fighting fires; 3. logging; and 4. public use (firewood gathering, berry picking, hunting, fishing, etc.). In other words . . . multiple use!! (Individual, Kalispell, MT - #76)

**Response:** See response to comments #385 and #388.

**#398 Public Concern: The Final EIS should open roads to ensure disabled access.**

I am totally against road closures. I am handicapped—my entertainment is a ride in the woods, taking photos of landscapes and wildlife. Your road closures do nothing more than take away the people's right to use and enjoy the public roads and woods our taxes pay for. Please give us back our access to "our" lands.

**Response:** See responses to comments #385 and #388.

**#399 Public Concern: The Flathead National Forest should open closed roads.**

It is completely ridiculous to close Road 316 or any other side roads that everyone has enjoyed for years and years. Please do not close any more roads and open the roads that are now gated. (Individual, Lakeside, MT - #145)

As a Montana taxpayer, I feel these forest service roads are gated off unfairly. We, the taxpayers, should have some rights in voicing our opinion. I should have the right to enjoy our forest and adventure wherever I want. Gated roads confine us from cutting firewood, huckleberry picking and hunting. Please . . . consider opening some of the gates for the hard working tax payers of Montana.

**Response:** See responses to comments #385 and #388.

**#400 Public Concern: The Flathead National Forest should not decommission 87 miles of roads.**

As a resident of Flathead County, I use Forest Service roads. They are used for a wide variety of reasons, which is part of our culture. If using sustainable yield harvesting practices, these roads would continuously be utilized for timber hauling. If you were to monitor a road and its users, you would find the level of use to be significant (1 user of a road is significant—especially to that citizen). To propose between 56 and 87, or 57 miles of road decommissioning is totally unacceptable. I live in Whitefish Montana, Flathead County. I use these roads regularly for a wide variety of reasons. I have seen enough closures and road obliterations.

I am firmly against 87 miles of reduced public road access in the public national forest lands. I do not believe that this reduction of the road network would truly benefit the wildlife habitat. I believe it would only restrict the general public from enjoying the forest.

There are a majority of winter recreationists who want more access to these areas. Traditionally, as areas have been managed, access has been allowed and the areas show little impact overall. Grizzly populations have been increasing with the existing road densities so no decommissioning should have to occur. If we are to take management actions as imposed by the DEIS, it would be a matter of bureaucracy rather than of practicality and prudence.

**Response:** Thank you for your comment. Your comment will be considered by the decision maker.

### ***Special Designations***

**#401 Public Concern: The Final EIS should include an analysis of all private land impacts and activities to complete cumulative effects analyses.**

Please obtain data concerning impacts on private lands. The Forest Service failure to obtain this data is in violation of NFMA, which requires "each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative jurisdiction." The Forest Service obtain data concerning substantial grazing, timber harvest, timber prices and road building on private lands in the analysis area, and utilizing the information in a thorough cumulative effects analysis for the various resources.

**Response:** Beginning in Chapter 3 of the DEIS and the FEIS with the disclosure of past, present, and reasonably foreseeable actions, our analysis continued throughout the document to describe impacts from private lands to the

resources affected by the Moose Post-Fire Project. In many cases, the analysis area is the Big Creek drainage, which contains no private land, so there are no impacts from private lands.

**#402 Public Concern: The Final EIS should address immediate project impacts and cumulative effects on unroaded areas.**

The potential exceptional value of unroaded areas for watershed, soil, wildlife, fish and quiet recreation has been recognized by the agency, yet the DEIS fails to adequately address the impacts that timber harvest will have on these unroaded areas. This violates the National Environmental Policy Act requirement that environmental consequences of the action be fully analyzed and disclosed to the public.

You should consider the unique functions of roadless areas as refuge for solitude-dependent wildlife and at-risk fisheries, reservoirs of undisturbed genetic material, connecting corridors within an increasingly fragmented landscape and natural "control" areas for experimental "management" and scientific research. You must address the project's full potential impact on these critical ecosystem features by closely examining land beyond the immediate analysis area and considering the cumulative landscape-scale effects of continued habitat destruction within and adjacent to unroaded forest land. NEPA demands such. These cumulative impacts include not only present and foreseeable future effects, but also the accumulated, incremental effects of past human activity, including prior degradation or destruction of undisturbed habitat.

**Response:** The FEIS fully analyzes the effects of the alternatives on unroaded areas. Issue 1 (page 2-3) helped to develop Alternatives 3 and 4, which propose no timber harvest in inventoried roadless areas. No new roads or temporary roads are proposed in any of the alternatives, so there would be no additional effects to roadless areas from roads within the project area.

**#403 Public Concern: The Final EIS should include an analysis that validates roadless area boundaries.**

Roadless area boundaries are an issue that has never been validated in any NEPA process. Only arbitrary Forest Service designation, outside of any public appeal opportunity, has set these boundaries. As part of this analysis, the roadless boundaries should be validated. This is addressed clearly by the *California v. Block* decision and others. Under Forest Service criteria, roadless areas must generally include 5,000 acres or more. The definition of roadless areas also includes, however, all roadless areas "adjacent to National Park lands endorsed for Wilderness" and other roadless areas "adjacent to existing wilderness areas regardless of size." Further, roadless areas can include areas "where logging is not evident" [*National Audubon Society v. U.S. Forest Service*, 21 E.L.R. 20828, 20829, n.I (D. Ore. 1990)].

**Response:** Validating roadless boundaries is an activity outside the scope of this analysis. DEIS Chapter 3, page 3-278, describes the process used to determine inventoried roadless areas, and page 3-379 describes the process used to determine other unroaded areas included in the analysis. Until regulatory requirements exist for areas not designated as inventoried roadless, management area direction determines appropriate activities within unroaded areas.

**#404 Public Concern: The Final EIS should acknowledge the importance of roadless areas as wildlife habitat.**

When analyzing unroaded lands the DEIS failed to acknowledge that these areas are critically important for wildlife habitat and core secure areas. The DEIS instead focused on recreational opportunities and solitude. We urge you to acknowledge these areas are important for more than just recreation.

**Response:** The relatively large proportion ( $\geq 68\%$ ) of grizzly bear subunits that is required to be unroaded under Amendment 19 is an indicator of importance of roadless areas for grizzly bears. Many other wildlife species tend to be most secure in unroaded habitat. The Inventoried Roadless section under ‘Special Designations’ in the FEIS contains acknowledgement of the importance of roadless areas as wildlife habitat.

**#405 Public Concern: The Final EIS should clearly identify the location of all logging infrastructure in relationship to unroaded areas.**

How many of the cutting units, access routes (roads, road reconstruction, skid roads, skid trails, etc.), log landings, or helicopter pads would be located in inventoried roadless areas, on the periphery of inventoried roadless areas, or within uninventoried (de facto) roadless areas? Consider portions of roadless areas on FS land and portions of roadless areas on the public land of other agencies. We are concerned that logging, road building and associated infrastructure would negatively affect the wildlife, native plant, soils, watershed, recreational and other resources and values dependent upon roadless areas.

Because of the increasing scarcity of roadless land in the Northern Rockies, and the ever-increasing awareness of the importance that these areas have for the conservation of biological diversity, any impacts that would degrade the wilderness characteristics of a roadless area are unwise. A bioregional and ecosystem approach to wilderness protection reflecting the best science available-conservation biology-shows that further degradation of roadless areas is scientifically, ethically, biologically, and socially unacceptable. Roadless areas in the vicinity of this project area are being considered by Congress for Wilderness protection, and included in the Northern Rockies Ecosystem Protection Act, introduced into Congress in 1993, in 1995 and again more recently.

**Response:** The DEIS clearly states the number of acres within inventoried roadless scheduled for salvage harvest for Alternatives 2 and 5 in Chapter 3, page 3-279 and for other unroaded areas on page 3-280. The FEIS updates this information. Each of the alternative maps also displays inventoried roadless areas and unroaded areas. No new roads or temporary roads would be built for this project. All of the units would be helicopter logged. The number and location of helicopter pads and log landings are being determined for the entire project area at this time. See Chapter 3, Special Designations, for a description of the effects to these areas. All project activities would occur in management areas where the Forest Plan currently allows such activity.

**#406 Public Concern: The Final EIS should outline project-related impacts to biological corridors, roadless area characteristics, and potential land designation proposals.**

How would the project impact biological corridors in the area, including (roaded or unroaded) biological corridors between roadless areas? How would this project affect roadless characteristics of any roadless areas in the project area? How would this project affect the future eligibility for wilderness of any roadless areas in the project area? How would this project affect the future status of lands proposed for protection in bills before Congress, such as NREPA?

**Response:** Two of the proposed action alternatives propose salvage entry in inventoried roadless areas while the two other action alternatives propose no salvage in these areas. Beetle infested trees are the only trees proposed for removal on 400-500 total acres in inventoried roadless areas by helicopter. Actual treated acres are less; we are estimating that approximately 150 acres include infested beetle trees based on this summer’s monitoring.

The effects of the project on roadless areas and its values have been evaluated in the roadless sections of the DEIS (pages 3-278 to 3-381) and in the other resource sections in Chapter 3, which in addition to public comments, will help aid the responsible official in making a decision about salvaging in inventoried roadless areas. This information has been updated in the FEIS. The Chief of the Forest Service would be the deciding official if inventoried roadless salvage treatments are ultimately selected for implementation. None of the inventoried roadless areas were recommended for wilderness in the Forest Plan.

There is no special direction for management of other “unroaded lands” like there is for inventoried roadless areas. Management direction for these unroaded lands comes from the Flathead Forest Plan. Salvage logging as proposed in the Moose DEIS in these unroaded lands is permitted by the management area direction provided in the Forest

Plan. An analysis of the characteristics of these lands was discussed on pages 3-279 through 3-281 of the DEIS, and reiterated in the FEIS.

The Northern Rockies Ecosystem Protection Act (NREPA), H.R. 1425, was last introduced to the U.S. Congress in 1995. The purpose of NREPA is: "to designate as wilderness, wild and scenic rivers, national park and preserve study areas, wild land recovery areas, and biological connecting corridors certain public lands in the States of Idaho, Montana, Oregon, Washington, and Wyoming, and for other purposes."

The lands in the North Fork (Glacier View Ranger District) were identified as a potential area to add to the National Park System. The bill would have had Congress directing the Secretary of the Interior to "to study the feasibility of creating a Flathead National Park and Preserve. The Secretary shall study the feasibility of designating the study area described in subparagraph (B) as a unit of the National Park System, including the feasibility of applying to the study area national park and national preserve designations to be administered by the National Park Service. The study shall include specific recommendations as to which areas within the study area boundary should be classified as national park, and which should be classified as national preserve where hunting, fishing, and some motorized use shall be allowed."

The bill continues to state that "until the Congress enacts a law stating otherwise, no new road construction or reconstruction, or timber harvest (except firewood gathering) shall be allowed within the study area. Additionally, no oil or gas leasing, mining, or other development which impairs the natural and roadless qualities of the study area shall be allowed within the study area. In administering the study area, the Secretary of Agriculture shall give special consideration to preserving scenery, water quality and fisheries habitat, biological diversity, and wildlife habitat for threatened and endangered species."

This bill has been consistently referred to the Committee on Resources with no further action being taken. The bill as well as other wilderness bills proposed for Montana have been highly controversial and is anticipated that it will take some time to resolve the wilderness issue. Consideration of the North Fork of the Flathead as a National Park Study Area as defined in this bill is beyond the scope of the Moose Post-Fire Project, and up to Congress to resolve. Until that time, the Flathead Forest Plan provides management direction for this area.

**#407 Public Concern: The Flathead National Forest should prohibit roadbuilding in roadless areas.**

I am writing to urge that there be no roadbuilding in both inventoried roadless areas in the Flathead National Forest. Dead trees, as you know, are the most beneficial trees to forests, and removing them destroys an integral component, as well as forest habitat for animals.

**Response:** There is no road building proposed in any of the alternatives, in or outside of inventoried roadless areas.

**#408 Public Concern: The Flathead National Forest should recognize and consider the ecological values of unroaded areas.**

The Forest Service should recognize and consider the unique ecological values associated with designated and de facto roadless areas within what is otherwise a heavily logged and fragmented national forest system. The Forest Service continues to resist change, excluding a sound application of "ecosystem management" that looks at the role of the increasingly scarce roadless resource in sustaining ecosystems far into the future. Scientists both inside and outside of the Forest Service have come to recognize that such undisturbed areas provide critical habitat for the maintenance of biological diversity and population viability in the Inland Northwest.

Because of the increasing scarcity of roadless land in the Northern Rockies, and the ever-increasing awareness of the importance that these areas have for the conservation of biological diversity, any impacts that would degrade the wilderness characteristics of a roadless area are unwise. A bioregional and ecosystem approach to wilderness protection reflecting the best science available-conservation biology-shows that further degradation of roadless areas is scientifically, ethically, biologically, and socially unacceptable. Roadless areas in the vicinity of this project area are being considered by Congress for Wilderness

protection, and included in the Northern Rockies Ecosystem Protection Act, introduced into Congress in 1993, in 1995 and again more recently.

**Response:** See response to comment #406.

**#409 Public Concern: The Flathead National Forest should consider public opposition to extractive development in roadless areas.**

In addition, the DEIS should have taken into consideration the fact that Americans oppose extractive development in roadless areas. The vast majority of the record 1.5 million people commenting on the Roadless Area Conservation Rule (RACR) supported an end to logging and road building in roadless areas. Americans are opposed to logging in our national forests, and in our roadless areas. A national poll conducted by Market Strategies, Inc. found that overall, 69% of Americans want logging of our national forests to end. A recent nationwide poll conducted by the Mellman Group, Inc., found that 63% of Americans support a proposal to protect all roadless areas over 1,000 acres in size. More than 70% of Americans favor a ban on oil drilling, logging and mining in roadless areas. The same poll also found that 67% of Americans believe that off-road vehicles should be prohibited in roadless areas. The polls showed that there is strong sentiment for protecting roadless areas, and that this transcends region, gender, and political party identification.

**Response:** Alternatives 1, 3, and 4 propose no management activities in inventoried roadless areas, and, although Alternatives 2-5 all propose salvage harvest in other unroaded areas, all logging would be by helicopter. These alternatives were designed to respond to concerns by some people who do not want us to propose any activities in roadless areas. As with any analysis, all research, science, and opinions need to be included, and this means that, along with your concerns, we also must weigh the concerns of those desiring us to salvage beetle-killed trees. As such, we developed alternatives that include salvage within unroaded areas. The decision maker will choose which alternative best fits the needs of the area.

**#410 Public Concern: The Final EIS should explore alternative timber harvest methods in roadless areas.**

It should be clear to one and all now that roadless and nice are not harmonious terms. They could be harvested though the use of low ground pressure machines, winter logging, or line skidding equipment; slash on the ground would go a long way in holding soil and ash in place.

**Response:** All units would be helicopter logged, which would have less impact on these units than the methods you mentioned.

**#411 Public Concern: The Final EIS should prohibit logging in roadless areas to preserve the value of unroaded areas.**

There is an extensive body of documentation available to show the controversial nature of logging in unroaded areas, and the scientific support for not engaging in commercial extraction activities in them. There is much restoration work of a higher priority that could be accomplished outside of unroaded areas without burdening the decision by tying it to the controversy and negative impacts of post-fire logging within unroaded areas. The DEIS pretends there is some biological difference between unroaded lands that were included in the roadless inventories, when in fact there is none. Roadless areas should be preserved to protect these values.

Do not allow any inventoried roadless area logging. The DEIS preferred alternative proposes to log 483 acres of roadless lands. These lands are very important secure habitat for grizzly bears and other sensitive species. I am completely opposed to any removal of logs from any roadless areas on the Forest. I am a strong advocate for the preservation of our remaining roadless national forest lands. These lands are best left for the enjoyment of future generations and for their current value as rare habitat for wildlife.

Three out of four alternatives propose logging in inventoried roadless areas—even Alternative 4 proposes to log in uninventoried roadless areas. The Northern Rockies Ecosystem Protection Act has 138 sponsors in Congress and would designate these roadless areas as wilderness. The Flathead should not alter the wilderness character of these roadless areas by logging in them.

We applaud the reduction of logging in Inventoried Roadless Areas from 1000 acres to 483, and strongly encourage a further reduction to zero. Unquestionably, logging these areas will create a large and unnecessary conflict which cannot help but embroil the entire project. We urge you to further improve the DEIS, and its chances of implementation, by removing the 999 acres of "uninventoried roadless" from consideration as well.

The Flathead National Forest is proposing to salvage harvest on a total of 999 acres on the south and west faces of Demers Ridge. We firmly believe that these unroaded areas should be maintained as wildlife habitat refuges. Salvage logging and road building will drastically alter the natural conditions both now and into the future.

No unroaded area (roadless lands larger than 1,000 acres) logging.

**Response:** See response to comment #406.

**#412 Public Concern: The Flathead National Forest should reassess its decision to log in the Deadhorse and Standard Peak areas.**

We are also concerned about the proposed harvest of 483 acres in roadless areas (434 acres within Deadhorse IRA and 49 acres within Standard Peak IRA) to remove beetle infestation and beetle susceptible large diameter spruce and Douglas-fir trees in Alternatives 2 and 5, although we are pleased that yarding would be via helicopter and no equipment would enter the roadless areas. We are concerned about potential effects on roadless characteristics, although we also recognize that there are 12,112 acres of inventoried roadless areas within the Moose fire area, and only 1.8% and 0.6% of the acreage in the Deadhorse and Standard Peak IRAs, respectfully, would be affected.

**Response:** See response to comment #406.

**#413 Public Concern: The Flathead National Forest should not use bark beetles as an excuse to log in roadless areas.**

We are not supportive of any logging in Inventoried Roadless Areas. The Flathead is using the supposed need of controlling bark beetle infestation as the reason that salvage logging is needed in 483 acres of the analysis area IRAs. We believe that this is a non-defensible scientific argument that is just an excuse to enter these wild areas. We urge you to leave these 483 acres alone and not take the wilderness characteristics away from this area.

Big Creek forests that survived the 1910 and other fires obviously did not succumb to the type of post-fire beetle epidemic being used to justify Moose Fire salvage logging. Roadless lands do not need salvage logging to save them, they need support of the biological processes that roadless lands are meant to protect.

MWA believes the Forest Service should stay out of the Inventoried roadless areas. The rationale of logging to preclude epidemic insect infestation may have some merit, but becomes inconsequential given the thousands of burnt acres within Glacier National Park that will receive no treatment.

**Response:** Refer also to response to comments 147, 149, 155 and 156. The effects on the Roadless areas from potential salvage logging are fully disclosed in the FEIS, Chapter 3. A very small portion (about 470 acres, or <2%) of the entire Roadless areas would be affected by salvage, and this along the very boundary of the Roadless, within a few hundred feet of a permanent road. In addition, only trees infested with beetles would be removed from the Roadless area units – a very small portion of the total tree component. All logging would be low impact helicopter logging.

It is not possible to know exactly what forests occupied the sites that burned over in the 1910 burn, and what their condition was following the burn. It is entirely probable that the fire burned so hot that there was very little habitat available to Douglas-fir or spruce bark beetles (as evidenced by the dense, single aged, forest with case-hardened larch snags the only obvious reminder of the 1910 fire). In some areas, such as the Demers Ridge area, it is very possible that dense single aged younger forests dominated the landscape prior to the 1910 burn (as attested by the very “clean” forest floor and lack of snags in this area prior to the Moose Fire). This condition also does not lend itself to bark beetle outbreaks either. In any case, it is made clear in the Moose Post-fire EIS that bark beetle outbreaks are not a certainty after a fire, neither are they unheard of. Each situation is unique and must be evaluated in light of its uniqueness, as we have for the Moose fire area.

**#414 Public Concern: The Flathead National Forest should employ alternative treatments for bark beetle infestation in roadless areas and the Wild and Scenic River corridor.**

Both in Wild and Scenic River corridors and in all roadless areas we recommend that the Forest Service employ funnel traps, pheromone treatments, and limited trap trees in preference to logging. We are not convinced by the argument that this is cost prohibitive, since many of these acres are scheduled for helicopter logging, one of the more expensive options available—but also the least economically damaging.

**Response:** An integrated approach is used in all alternatives, using pheromone chemicals, beetle funnel traps, trap trees, burning/debarking and salvage harvest. Refer to alternative descriptions in Chapter 2 of the EIS. Also refer to discussion under Alternative 6, an alternative considered but not given detailed analysis. This alternative considered use only of non-salvage methods of beetle management.

**#415 Public Concern: The Flathead National Forest should reserve decisions pertaining to roadless areas until the Roadless Area Conservation Rule is finalized.**

Managers should remove roadless areas from the plans for salvage logging even if it is intended to be done by helicopter. The DEIS notes the absence of indications that a bark beetle epidemic is in the offing. Logging in roadless areas like Deadhorse Ridge and Standard Peak is not appropriate, especially in view of the continuing uncertainty about the eventual fate of the January 2001 Final Rule for Roadless Area Conservation, the still pending appeal of the Idaho federal judge's preliminary judgment enjoining the Final Rule, and the uncertain fate of the December 2001 interim directives of the current FS Chief.

**Response:** See response to comment #406.

**#416 Public Concern: The Final EIS should acknowledge that logging in roadless areas could create snowmobile travel and play areas.**

The proposed logging in roadless areas may also have the unintended consequence of creating and opening up new avenues for the creation of snowmobile travel and play areas.

**Response:** See response to comment# 380.

**#417 Public Concern: The Final EIS should prohibit activities that negatively affect the Wild and Scenic River corridor.**

It would be wise to remove the unnecessary "red flag" that logging in a Wild and Scenic corridor raises. Such areas are valued and set aside precisely because of their wild, natural characteristics, and logging in such areas runs counter to their basic intent, and should be dropped.

No activities of any kind should be allowed to occur in sight of or that could in any way affect the Wild and Scenic corridor. This is a federally protected site, intended to maintain and preserve the specific qualities for which it was created. Timber harvest is inconsistent with the Wild and Scenic mandate and qualities and therefore should not be permitted. If harvest must occur because there is no treatment alternative for bug infestation, then no non-infested trees should be harvested and harvested trees should be removed leaving no visible stump.

**Response:** The proposed salvage in the Wild and Scenic River corridor (“recreation” section) is located in three areas totaling 16 acres directly adjacent to the North Fork Road. Only beetle-infested trees would be removed and no riparian areas would be impacted. Our proposed treatments are consistent with direction in the Wild and Scenic River Act and the Forest Plan. The Forest Plan allows vegetation management to occur in the “recreation” river corridor to maintain a healthy, vigorous timber stand.

**#418 Public Concern: The Flathead National Forest should safeguard the boundaries of the Big Creek Roadless Area.**

(3-19): "Alt. 2 and 5 would treat 320 acres across 483 acres within inventoried roadless areas . . . . The roadless areas in Big Creek are political boundaries and are not inherently ecologically sensitive." This may be, but they are also boundaries the American public has established and which should be protected. Until and unless the USFS can demonstrate that they are willing and capable of protecting these areas from the encroachment of becoming snowmobile playgrounds they should defer any timber harvest, fire salvage or otherwise.

**Response:** See responses to comments #380 and #409.

**#419 Public Concern: The Final EIS should clarify the designation criteria for Demers Ridge.**

In my previous comments I asked a question about Demers Ridge which no one could answer at the Open House. Why is the Demers Ridge area not listed as an inventoried roadless area? It appears to be around 5000 acres and the ridge top is classified as 2-A, semi-primitive, non-motorized. It appears to qualify as an inventoried roadless area.

**Response:** The Forest Service initiated a review of roadless areas larger than 5000 acres in the 1970s to determine their suitability for wilderness. The Roadless Area Review and Evaluation II (RAREII) resulted in a nationwide inventory of roadless areas. New inventoried roadless areas have not been identified on the Flathead National Forest since that inventory process. It is not known why Demers Ridge was not identified as an inventoried roadless area in the RARE II process that occurred 30 years ago.

**#420 Public Concern: The Final EIS should prohibit logging in the Deadhorse, Standard Peak, and Demers Ridge unroaded areas.**

I'm compelled to express my concern for the health of the Flathead National Forest. I have been informed that extensive logging may occur following a fire. As a recreationist, I value the beauty of Montana's forests and wildlife. Therefore, I must express my opposition to the proposed logging in the Moose Post-Fire Project—especially in the roadless areas including Deadhorse, Standard Peak, and Demers Ridge. These areas are vital for the charismatic fauna that bring tourists to Montana.

**Response:** We appreciate your comments about roadless area values; the Responsible Official for making the decision on this project has the opportunity to select two of the action alternatives which do not propose any salvage treatments in inventoried roadless areas or two of the other action alternatives which would propose salvage treatments to address our concerns with bark beetle population buildups. There is no special direction for management of other “unroaded lands” like there is for inventoried roadless areas. Management direction for these unroaded lands comes from the Flathead Forest Plan. Salvage logging as proposed in the Moose DEIS and FEIS in these unroaded lands is permitted by the management area direction provided in the Forest Plan. An analysis of the characteristics of these lands was discussed on pages 3-279 through 3-281 of the DEIS, and in the FEIS.

### ***Economics and Social Concerns***

**#421 Public Concern: The Final EIS should clarify alternative potential sources of fiscal year 2003 timber sales.**

On page 3-290, there is reference made "that most of the timber to be sold in FY 2003 from the proposed project could likely be made up from other sources (Dahlgren 2002). What are these other sources? Are they other Forest Service sales, private lands, industrial lands. Canadian timber? How can you regain the value of an apple you have let spoil by buying another green apple? The economic value of forest products, a tree, is lost forever if it is not harvest when it is merchantable. What is the basis for this decision?

**Response:** The timber that could be made up from other sources" consists of timber from National Forest lands. There will probably be economic effects from not salvaging timber but these will likely be long term when an equivalent volume of substitute timber cannot be found. That is why page 3-290 of the DEIS specifically refers to "short-run" effects and states that "there could be a significant effect in the long run but it would be spread over many years".

**#422 Public Concern: The Final EIS should include a current high bid estimate and cash flow analysis.**

The Flathead National Forest must complete the required economic analysis in the EIS for the proposed Moose Post-Fire project. Please include in the Environmental Impact Statement a current estimate high bid as required by the Forest Plan and a cash flow analysis.

The Forest Service is required to do a cash flow analysis that includes costs and return. The DEIS did not include one.

**Response:** The economic analysis required by NEPA is included on pages 3-284 through 3-294 of the Draft Environmental Impact Statement. There is no reference to where laws, regulations, or agency policy state that an estimate of "high" bid is required in NEPA documents. Although it can be important information in economic efficiency analysis and subsequent decision making it is not required to be disclosed in NEPA documents. However, in response to this and other similar comments, we have updated the economic analysis for the FEIS. Refer to the Economics section of the FEIS and the Project Record for further information.

**#423 Public Concern: The Final EIS should analyze the economic impacts of road obliteration on local communities.**

I feel none of the road obliteration should be done. You are not doing an economic impact study on what tearing out these roads will do to our community. I think you are doing a disservice to the community and to the public by closing and destroying these roads.

**Response:** The economic effects of road obliteration (Road Management) is discussed on page 3-292 of the DEIS, and reiterated in the FEIS.

**#424 Public Concern: The Flathead National Forest should reassess the economic benefits and costs of road decommissioning.**

The economic assessment is horribly skewed, especially in terms of the economic benefits of road decommissioning and other restoration activities. The DEIS, at 3-202, concludes "road decommissioning is not a very labor intensive activity producing only from 5 to 7 jobs with the action alternatives." This erroneous conclusion is reached, in part, because the DEIS underestimates by nearly four times the number of jobs produced by road decommissioning when compared to the contemporary Lolo Post-Burn FEIS! The Moose DEIS estimated one job is produced for approximately every 11 miles of road decommissioning while the Lolo FEIS, at S-33, estimates one job for every 3 miles. Similarly, the Moose DEIS estimates less cost associated with road decommissioning (\$5,000/mile v. \$5,700/mile) and, in turn, less employee compensation per job (\$16,600/job v. \$18,000/job) than does the Lolo FEIS. This is a glaring problem, given the Lolo analysis includes the Kalispell area in its area of economic impact. So why such different numbers? The Moose DEIS assessment is further skewed in that it provides no discussion of the indirect jobs, Forest Service jobs, supportive jobs, and income generated from spending by road decommissioning workers while it does exactly that for timber jobs and workers. This is a blatant misrepresentation of the

economics, especially given that road decommissioning requires much of the same machinery, fuels and support services as are needed for logging.

It seems strange that I have yet to see a petition or a comment sheet for more road closures! The public does not stand behind you or support the backdoor, green, agenda deals that are being made. The "let it burn" policy is destroying jobs and valuable revenue. Where is the EIS on all of the road closures? News Flash: timber is a renewable resource! Why should my tax dollars be spent to rip out roads that past tax dollars were used to build. All of these roads are intended for harvest access, fire control, and recreational use, also known as revenue! Not only are my tax dollars being used to destroy my local economy, my local taxes are being raised to compensate for the lunacy of the first.

**Response:** The estimates of employment and income generated by road decommissioning were based on work done for the Bitterroot NF Burned Area Recovery Final Environmental Impact Statement. This work was done by economists from the FS Inventory and Monitoring Institute and the Regional Economist for the Northern Region of the FS. Their work was based on the IMPLAN economic impact analysis model using the road construction sector assuming that the production function would be similar to that of road restoration. Their results showed that approximately 18 jobs were created for each million dollars spent in road restoration activities. This is one job created for each \$55 thousand dollars spent. This includes all jobs – direct, indirect and induced; government sector and private sector. This means that in Alternative 2 for example, \$285 thousand will be spent on road restoration, which will generate approximately 5 jobs. This is consistent with what is displayed in Table 3-94 of the DEIS. The determination of total income was done using the same procedures. Why this is different than the Lolo Post Burn was not investigated. This is because the result is still insignificant compared to the total annual job growth in the region and the difference is not relevant to the decisions being made.

The allocation of the FS budget to various potential products is not the function of a NEPA analysis. The economic effects of the proposed action and alternatives are included in the Draft EIS on pages 3-284 through 3-294.

**#425 Public Concern: The Final EIS should analyze the economic and resource benefits of increased investment in road decommissioning.**

Especially given that Big Creek is an impaired watershed, we urge the Flathead to remove its blinders and bias and look carefully at increasing its investment in road decommissioning and other watershed restoration work. While \$5,000 - \$6,000 per mile may be a reasonable rule of thumb for basic road decommissioning work, actual costs for more intensive work may run higher. Further, investments in better decommissioning and road revegetation in this sensitive watershed are fully warranted and may in fact bear more fruit in terms of creating good-paying jobs than further investments in offering economically risky timber salvage that may not be bid on.

Newspapers recently reported that oversupply of lumber and depressed lumber prices are making salvage logging, in general, a risky investment, and helicopter salvage logging particularly risky economically. The Moose DEIS, at 3-290, shows that, in spite of claims of inadequate timber supply, the Flathead NF offered an average of 25 MMBF of timber per year over the past seven years, while industry only harvested an average of 18 MMBF. It's tough to move salvage timber in light of these circumstances. Poor prices and demand in the timber market should serve as an incentive to the Flathead to look at investing more in road decommissioning and other restoration work, which is absolutely essential to restoring the Big Creek watershed to health. Indeed, the Moose DEIS finds that road decommissioning helps soil productivity (at 3-165), improves long-term water quality and fisheries (at 3-251), and would provide badly needed big game security in the fire area, were it not for the fact snowmobiles are proposed to be allowed on decommissioned roads (at 3-138-139).

**Response:** Comment is concerned about the costs of road decommissioning and how investments in more decommissioning might bring a better rate of return than offering a risky timber sale. It is not required that this kind of analysis be displayed in the NEPA document or be part of the NEPA analysis.

Issues of cost and benefits or project viability are important factors for decision makers to consider. Additional information has been provided in the economics section of the FEIS to display revenues, costs, and present net values of all alternatives.

**#426 Public Concern: The Final EIS should include an analysis of the market and non-market values of unlogged forests.**

The Forest Service must analyze the market and non-market benefits of unlogged forests in analysis areas, including; a) their role in regulating the flow of water in the affected watersheds; b) their role in mitigating flash floods and other catastrophic precipitation events; c) their role in purifying water for downstream users; d) their role in maintaining long-term forest productivity; e) their role in providing a source of native organisms vital to regeneration and forest development in surrounding areas; f) their role in mitigating pests.

The Flathead National Forest must incorporate ecosystem service value as a standard component of the agency's environmental assessment process. Failure to do so will artificially inflate the value of forests as timber relative to their role in regulating climate, purifying water, and supporting aesthetic or recreational uses. Unless project NEPA analyses incorporate ecosystem service values, they cannot meet NFMA's mandate to properly assess the value of all forest resources and functions that have a market value [36 CFR 219.12(e)(1)ii, iii].

**Response:** The effects of the proposed action and alternatives on the various elements of the physical and biological environment are described in Chapter 3 of the EIS. There are no legal requirements that the economic value of these ecosystem services be determined and reported for an implementation project.

NFMA requirements are for planning analysis, not implementation analysis. The Moose Project is within the scope of the Flathead National Forest LRMP.

**#427 Public Concern: The Final EIS should include an economic analysis of project impacts on competing timber interests.**

The economic analysis fails to address the issues we raised in our comments submitted on February 5, 2002. The economic community goes beyond the narrow scope the Flathead has identified and should include lost business revenue incurred by those engaged in ecologically sensitive timber harvest on private lands who face unfair competition from subsidized public timber sales implemented under less costly, less ecologically sensitive practices such as those usually proposed by the Forest Service.

**Response:** There is no evidence submitted to support the contention that certain management on private lands is more ecologically sensitive than management on government land. The activities included in the Moose Post-fire Project will comply with all applicable environmental laws and regulations which often are more "ecologically sensitive" than those applying to private land. Also, there is no evidence offered that revenues from "environmentally sensitive" sources are competitively disadvantaged by timber sales from public lands. There seems to be confusion with the term "revenue". Maybe a better case could be made for effects on "net income". In the local short-term market added costs incurred by a firm for environmental protection do not affect the selling value of their product, which is determined in a separate market.

**#428 Public Concern: The Flathead National Forest should reduce the jobs-to-million board feet of timber ratio.**

The jobs created by logging in the DEIS is very high at 15 jobs per million board feet. In 1990 the Forest Service claimed that there were 10 jobs per million board feet and an independent economist estimated there were between 3 and 5 jobs per million board feet. Every other industry in America is getting more efficient but the Forest Service claims the timber industry is getting less even though it is now more mechanized. It is hard to believe that it takes more people to process timber in 2002 than in 1990.

**Response:** The commenter does not give specific references to allow a comparison and determine why there are differences – there are many legitimate reasons why the results could be different. The results and methods of analysis are included in Chapter 3 of the EIS.

**#429 Public Concern: The Final EIS should include an economic benefit analysis of increasing salvage volume.**

On page 3-289 and 3-290, there is discussion about the number of production works in the wood products industry and how these numbers could be increased by doing salvage operations on national forest land. What are the numerical benefits of this added salvage volume?

**Response:** There is no presently known data to show how many jobs and how much income could be generated from salvaging all the available timber. This is because this potential is located over many ownerships (state, federal, private non-industry etc.). However, it is safe to say that this number would vary significantly depending on what assumptions were made and constraints imposed.

**#430 Public Concern: The Final EIS should include an economic analysis of the costs and benefits associated with proposed harvests.**

The DEIS does not seem to analyze the actual economics of the proposed harvest and other activities, including but not limited to the cost of analyzing, implementing, and monitoring the sale. The Forest Service should include a full analysis of the costs of conducting the proposed harvest. The DEIS' mention of the Beschta report and the responses in Appendix D seem to underscore that much of the harvest proposal will cause more injury than it will cause improvements, most, notably to water quality over time. The Forest Service should not allow short-term unknown impacts to be ignored in favor of broad sweeping promises of improvement. An economic analysis, including costs to conduct the sale and income to the U.S. would be particularly helpful to this end, because it appears that harvest profit is driving the DEIS.

36 C.F.R. [section] 219.14 (b) requires the Forest Service to conduct an in-depth economic analysis to determine the costs and benefits of proposed timber sales. Costs should include the anticipated investments; maintenance, operating, management, and planning costs attributed to timber production activities, including mitigation measures necessitated by the impacts of timber production. Further benefits should be expressed as expected gross receipts to the government. Such receipts shall be based upon expected stumpage prices.

**Response:** The concern submitted by the commenter is one of investment efficiency – benefit/cost analysis. Issues of cost and benefits or project viability can be important things for decision makers to consider. Although they are not considered “environmental effects” within the NEPA laws and regulations and do not have to be included in NEPA documents, we have incorporated additional information in the economics section to disclose the economic efficiency of the each alternative.

This section of the CFR applies to timber resource land suitability for Forest Plan purposes. It requires that lands to be classified as suitable for timber production in the Forest Plan be evaluated using certain economic criteria. It does not specify quantitative requirements, just the variables that must be considered. It does not impose analysis requirements on individual implementation projects such as the Moose Post-fire Project.

**#431 Public Concern: The Final EIS should include road maintenance and culvert monitoring costs in the analysis of logging costs.**

The analysis is skewed because the DEIS discusses whether future access for logging is "reasonable and economical," however, there is no discussion of the cost to maintain roads and monitor culverts.

**Response:** The concern submitted by the commenter is one of investment efficiency – benefit/cost analysis. Issues of cost and benefits or project viability can be important things for decision makers to consider. Additional information has been provided in the economics section that reflects the economic efficiency of each alternative. Road maintenance costs are included as costs incurred in the implementation of the timber sales.

**#432 Public Concern: The Flathead National Forest should recognize it is more expensive and dangerous to log burned timber stands than regular stands.**

Timber sales that are made must be economical to log. The Forest Service must recognize that logging burned timber stands is more expensive and much more dangerous than regular stands.

**Response:** An economic efficiency analysis is included in the FEIS which takes into consideration the increased costs for safe and efficient logging of burned timber stands. Please refer to the economics section for this additional information.

**#433 Public Concern: The Final EIS should include an economic analysis of costs incurred by county and state governments and individuals from national forest logging operations.**

The economic analysis fails to address the issues we raised in our comments submitted on February 5, 2002. The economic community goes beyond the narrow scope the Flathead has identified and should include cost incurred by county and state governments related to repair and maintenance of roads damaged by log trucks, costs incurred by county and state governments as well as private individuals related to loss of life or personal injury from collisions with or accidents caused by logging trucks transporting logs from national forest system lands and lost revenue and jobs incurred by those engaged in businesses related to recreation, fisheries, tourism, and other non-timber forest uses that will be precluded by proposed timber sales.

**Response:** Timber sale purchasers are responsible for road maintenance of gravel haul roads either through payment to the Forest Service or performing the maintenance themselves. Also, a portion of timber sale receipts goes to affected counties for road maintenance. Log trucks are also subject to highway use taxes which fund maintenance of state and county roads. Logging costs included in the transaction evidence appraisal process are built into the economic efficiency analysis in the FEIS. These costs incorporate highway use and fuel taxes into the estimated costs of transporting logs from the project area. The other costs you reference are speculative and you have provided no data or references to support your opinion.

**#434 Public Concern: The Flathead National Forest should reevaluate the economic impacts of the No Action Alternative.**

In my letter of February 4, 2002 concerning scoping for this project, I ask about the liabilities of the "No Action" alternative in the economics section (3-285-3-293). I find that the position has been taken that the "No Action" alternative has no effect. I do not believe this to be true. For example: The volume that is being proposed to harvest is 27 MMBF [Million Board Feet]. This is about what our sawmill uses in 1 year of production. In the year of 2001, our company employed 115 mill workers and 55 loggers for a total of 175 workers. On page 3-291 you used an average income of \$23,333, which is only 2/3s the average mill workers income. Using this income, these 175 workers would produce \$4,083,275 of payroll in the community. The actual payroll for the 115 workers was \$5,257,887. In addition we provide the following dollars into the community: supplies and services \$2,364,553; property taxes \$207,827; payment to contract loggers \$3,715,976; log tracks, road construction, private log purchases \$5,338,019; and contributions to various organizations \$250,000; all of which totals \$17,184,262. This amount does not include taxes paid by log truck, logging equipment and real estate to local cities, counties, state and federal entities. The statement made on page 3-293, that county taxes and 25% funds would not be affected because of public Law 106-393 is not correct.

The No Action Alternative should not be considered, but [the Forest Service] should examine [it] more closely and explain why it should not be chosen. If one of the goals in the Flathead National Forest Plan truly is to benefit the local economy, there should be a discussion of what will happen to the local economy with and without the no-action alternative. Figures are available to determine the real economic impact that would occur if merchantable wood fiber was recovered in a timely manner. There appears to be some conflict with figures used in the DEIS and those that could be supplied by local companies in the business.

**Response:** The commenter needs to put the income figures on equal terms before a valid comparison can be made. The most significant difference is that the DEIS discusses all jobs, not full time equivalents. The total

number of direct jobs includes seasonal and part time jobs. Also, subsequent rounds of spending as discussed by the commenter has been accounted for as indirect and induced jobs and income and included in total jobs disclosed.

There is no statement in the DEIS suggesting that county taxes would not be effected. Payments to counties from FS revenues will not be effected.

The No Action alternative has been considered as required by NEPA. Also, the effects of the No Action alternative have been included in the DEIS pg 3-290 through 3-294.

**#435 Public Concern: The Final EIS should include an assessment of the Present Net Value for the alternatives.**

The economics section of the Moose DEIS provides no assessment of Present Net Value for the alternatives—and should. If the Moose Project parallels the Lolo Project, alternatives with higher timber salvage volumes will show increasingly negative PNVs. The Lolo FEIS shows that road decommissioning alone also produces a negative PNV, although not as negative as when timber salvage is included. The inclusion of non-priced public benefits, such as improved water quality, fisheries and wildlife security, would cast road decommissioning in an even better light. The upshot of this is that substantial investments are required for either road decommissioning or timber salvage operations. The economics section of the Moose DEIS yields a rather ambivalent picture of the worth of Moose salvage to the area economy in light of the fact the area economy has become quite diverse. In fact, the DEIS at 3-286 and 3-289 shows Flathead unemployment was the lowest in the past 30 years in 2001, the same year the least timber was harvested on the Flathead National Forest in the last seven years.

**Response:** Economic efficiency analysis and the financial or economic viability of proposed projects can be important information to decision makers. In response to several comments regarding this type of disclosure, such an analysis has been included in the FEIS.

**#436 Public Concern: The Flathead National Forest should log more to replace or supplement taxes.**

The citizens of NW Montana are being dealt a further injustice by each of the alternatives being considered in the Moose Post Fire Project, as the very logging industry, supporting the economy of that area, is threatened by such alternatives. It is appalling that less than 10% of the timber destroyed by fire is even being considered for harvest! Private property taxes are currently raised to fund schools and other projects, when such needs could easily be funded through timber sales. Such alternatives would only add a greater burden to an already overburdened tax paying public! It is, also, a grave economic (if not criminal) injustice when local sawmills must buy Canadian logs and transport them over 500 miles just to keep their doors open.

**Response:** The reasons for the extent of timber removal are well documented in the DEIS and FEIS. The effects (or no effect) to Payments to Counties, which are used to partially finance public schools were explained on pages 3-292 and 3-293 of the DEIS and are reiterated in the FEIS.

**#437 Public Concern: The Flathead National Forest should not mandate a Purpose and Need limited to logging.**

The FS falsely implies that the only way the FS can support local communities is by extracting wood fiber. The FS does not explain what it means by "timber specialized" community or how this is defined (DEIS 1-9). And the FS exaggerates the amount of wood in Flathead County coming from federal lands and the impact on the community. Later in the DEIS, the FS states that Flathead County is the most economically diverse county in Montana. "In the past it was thought that Flathead County was highly dependent upon the wood products industry, which at one time comprised over 40% of the basic economy. However, the most recent data shows that approximately 22% is attributable to the wood products industry . . . This decline is due primarily to the rapid growth of other sectors of the economy . . ." (DEIS 3-288). By mandating a Purpose and Need limited to logging, the FS limits consideration of a full range of alternatives.

**Response:** The commenters reference to “timber specialized” community could not be found on pg. 1-9 of the DEIS. The commenter’s claim of “Exaggeration” of wood in Flathead County from National Forest lands was not accompanied by a suggested alternative source of information. The data used in the DEIS came from the University of Montana Bureau of Business and Economic Research who collects the data from the timber industry.

**#438 Public Concern: The Final EIS should disclose all socioeconomic costs of the proposed timber sale program.**

The EIS should . . . fully disclose the direct, indirect, and cumulative socio-economic costs of the timber sale program. These are required by the Multiple-Use Sustained Yield Act ("MUSY"), the Forest and Rangeland Renewable Resources Planning Act of 1974 ("RPA"), the National Environmental Policy Act ("NEPA"), the Administrative Procedure Act ("APA"), the National Forest Management Act ("NFMA"), the Global Climate Change Prevention Act ("GCCPA"), and the Forest Service Handbook and Manual implementing these regulations and rules.

**Response:** Most of the laws quoted by the commenter are applicable to Forest planning, not implementation and the data referenced is in the FNF Forest Plan or associated NEPA documents. However, economic efficiency information is very often an important consideration in the project-level decisionmaking process and additional information has been provided in the FEIS.

**#439 Public Concern: The Flathead National Forest should ensure that proposed salvage operations are rewarding enough to attract bidders.**

In your alternatives you have specific acres to be harvested by various logging systems. For your plan to be successful these systems must be economical and doable on the ground. What will happen, for example, if the area requiring helicopter logging is not doable or economically feasible? Should there be some alternatives planned for in the EIS to cover these situations? (Wood Products Industry/Association, Columbia Falls, MT - #1199)

**Response:** The assumption is that all alternatives are feasible and economically viable in the present market. Non-feasible or non-viable alternatives were eliminated in early phases of the analysis. The viability or feasibility analysis is not considered an environmental issue under NEPA therefore not included in the EIS.

**#440 Public Concern: The Flathead National Forest should salvage log to ensure funding for fire restoration.**

The resulting elimination of profitable sale of burned timber assures that such revenues will be unavailable for financing restoration and other fire-related costs. Utilization of other waste materials will be eliminated such as use for firewood, wood chips, or biomass power generation. The American taxpayer will be footing the entire bill plus making up for the lost revenues for schools.

**Response:** The availability of timber sale funds to perform future timber sale area work is not considered a NEPA issue and not included in the DEIS. The effects (or no effect) to Payments to Counties, which are used to partially finance public schools are explained on pages 3-292 and 3-293 of the DEIS and reiterated in the FEIS.

**#441 Public Concern: The Flathead National Forest should consider the economic impacts of not logging large diameter trees.**

In Alternatives 2, 3 and 5, all larch over 18" DBH are being left for bird trees. In Alternative 4, all larch and severely burned Douglas-Fir over 18" DBH are being left. What is the cost of leaving this material to the economics of the timber sale, to the community and to the tax base and income? (Wood Products Industry/Association, Columbia Falls, MT - #1199)

**Response:** Employment and income effects of timber harvesting in the proposed action and alternatives are included in the DEIS on pages 3-290 through 3-292 and reiterated in the FEIS. The differences between the alternatives in jobs and income include the differences in the amount of trees left for wildlife management.

**#442 Public Concern: To increase economic gain from salvaged timber, the Flathead National Forest should consider building additional temporary roads.**

Temporary Road Construction Page 3-209, Table 3-75: Your analysis indicates that the proposed temporary road construction and use for the salvage logging will yield an additional 0.5 tons of sediment. Your findings in this sediment analysis raises a serious economics question: If the effects of building and using temporary roads are so insignificant on the human environment, why are you not considering more temporary road building to access potential salvage areas? This could significantly reduce the proposed amount of helicopter logging systems and replace helicopter with more economical skyline or ground based systems—leading to greatly improved economic gain from the proposed salvage.

Modify the silvicultural prescriptions for harvest in roadless areas where the goal is to curb beetle infestation to ensure the action taken meets the objectives stated. Current proposed prescription for stands within the roadless areas has proven to be ineffective in meeting the objective of curbing mortality due to bark beetles. Since these areas are not roaded, the opportunity for multiple entries in the stands does not exist. Given the high cost of helicopter logging, it is imperative that the silvicultural prescription produces the desired end condition in one entry. We believe that this prescription would also bolster the economic viability of harvesting the stands within the roadless areas. Under the current prescription, harvest volumes are low enough that the economic viability of these units is questionable.

**Response:** Each proposed harvest unit was evaluated to determine what logging methods could be used while protecting important resource values. Helicopter logging was chosen for units that are in inventoried roadless areas to avoid building roads. Helicopter and winter tractor logging was chosen for units where soil disturbance is a concern. Skyline logging was chosen for units where slopes are too steep to tractor log, and where helicopter logging is not necessary. Tractor logging was allowed on the remainder of harvest units. When determining resource protection needs, additional temporary roads were not needed.

**#443 Public Concern: The Final EIS should include an analysis of all direct, indirect and cumulative project costs.**

In preparing the Moose Creek Project, the FNF must meet the substantive requirements regarding economic analyses set forth in NFMA. Specifically, the FNF must incorporate a wide range of external economic costs that will be passed on to public agencies, private landowners, business owners, and others adversely affected by the timber sale in combination with other timber sales ongoing and planned across the Forest, the Region, and the national forest system, as a whole. These include: costs associated with wildfires that originate in national forest timber sale areas and are primarily caused by logging or the slash left over by logging operations (historical data are available that can relate past timber sales on national forest lands with wildfires, and economic models are available to assign individual timber sales at risk or cost factor associated with potential future fires); decreased private property values in the proposed project area attributable to lost scenic, aesthetic, and recreational values on the lands affected by the proposed timber sale and other timber sales in this area; increased filtration costs incurred by private and municipal water users downstream attributable to the increased sediment load created by the proposed timber sale and all others in the affected watersheds; and adverse effects on global warming, including both loss of carbon dioxide absorption by existing forests as well as increased emissions of carbon dioxide caused by prescribed burning. Each of the effects noted above requires analysis by the Forest Service because they fall squarely within the definition of direct, indirect, and cumulative effects as well as connected actions described by NEPA (40 CFR 1508.7, 1508.8, 1508.25) and are significant at a broad national or regional scale. The Flathead National Forest must complete the necessary qualitative and quantitative assessments to incorporate the costs identified above as well as all other external economic costs. If costs cannot reasonably be assessed on an individual timber sale basis, the Flathead National Forest must first complete the analysis on a national, regional, or watershed scale and then assign a proportion of these costs to individual sales using established quantitative methods.

**Response:** The commenter references analysis requirements from the National Forest Management Act (NFMA). NFMA applies to land management planning and plans, not project implementation such as the Moose Project. The referenced analysis should have been done as part of the FNF planning process and will likely be included in the revision of the Forest Plan over the next 4 years. The economic effects of the implementation of the proposed action and alternatives in the Moose Project are included in the DEIS and reiterated in the FEIS with additional information on the economic viability of the proposed activities.

**#444 Public Concern: The Final EIS should include the impact of national policies and actions in its economic analysis.**

The national level policies, procedures, and actions omitted from NEPA assessment have significant environmental consequences because they guide the analysis of all individual timber sales, provide the rationale and justification for all individual timber sales, and establish administrative incentives to make the timber sale program as large as possible. They include: budgetary decisions and policies including the appropriation of funds for regional timber sales and the decisions regarding use of KV funds for administrative costs; timber sale accounting procedures; standard models used to complete economic and environmental analysis of forest plans and timber sales; national timber sales targets and national assessments of supply and demand for timber as well as other forest resources, and; internal reward and promotion guidelines that provide incentives to meet timber targets. The FS has not done all of the above in the DEIS.

**Response:** Costs associated with national policies and actions are clearly beyond the scope of this project-specific decision.

**#445 Public Concern: The Flathead National Forest should encourage snowmobiling to generate revenue for local businesses.**

We, the Columbia Falls Area Chamber of Commerce, very much support snowmobiling in the Flathead. The Flathead area is rapidly becoming a destination location for snowmobiling. Increased snowmobiling activity in the area has been a real boost to many local businesses. The income generated by snowmobilers comes at a time of the year that is slow for many businesses. Consider the Columbia Falls Area Chamber of Commerce big supporters of snowmobiling in the Flathead because it is a very environmentally friendly form of recreation for young and old. It also generates much needed revenue for many of our members during the winter months.

**Response:** The promotion of snowmobiling is outside the scope of this project.

**#446 Public Concern: To maintain the regional attraction for new businesses, the Flathead National Forest should not subsidize logging.**

The proposed timber salvage action would harm the region's economic base, its wildlife, fish, clean water, recreation and natural beauty, and therefore violates the Forest Plan. New industries in the region are moving here due to the unique qualities of the Northern Rockies ecosystem. It makes no economic sense to subsidize an activity—logging—that degrades the very values that attract these new businesses.

**Response:** The effects of the proposed action are included in the DEIS. They do not suggest there will be damage to the regions economic base, or other resources mentioned.

**#447 Public Concern: The Flathead National Forest should meet the economic monitoring requirements of its Forest Plan.**

Are you meeting the economic monitoring requirements of the Forest Plan?

**Response:** The economic monitoring requirements of the Forest Plan (Item No. 60 and 61) are a function of the planning requirements in the NFMA. The monitoring requirements apply to the annual results of programs, not individual projects. The results of monitoring are included in Forest Plan monitoring reports.

**#448 Public Concern: The Final EIS should include provisions for monitoring the validity of economic assumptions.**

The DEIS contained no provision to monitor whether its economic assumptions are valid.

**Response:** See response to comment #447. The DEIS and FEIS clearly stated the information sources for the economic analysis.

**#449 Public Concern: The Flathead National Forest should consider future generations in its post-fire management decisions.**

Post-fire forest management should concern itself with the needs of future generations rather than those of the current generation.

**Response:** The proposal supports future generations as well as present generations. Refer to the Purpose of and Need for Action, in the DEIS and FEIS.

## Transportation

### **#450 Public Concern: The Final EIS should include the proposal to build .9 miles of temporary road in all alternatives.**

Perhaps all alternatives should provide for the 0.9 miles of temporary road. A temporary road is hardly worse than a skid trail as far as soil compaction is concerned.

**Response:** Temporary road construction to access units 3, 8, and 9 is no longer included in any alternative. Unit 9 is now to be helicopter logged. Units 3 and 8 would be winter logged using snow roads if conditions are right for construction of snow roads. Otherwise units 3 and 8 could be helicopter logged.

### **#451 Public Concern: The Flathead National Forest should allocate funds to forest management activities more important than road decommissioning.**

The cost to decommission roads could be used for more important projects in forest management.

**Response:** The Flathead National Forest allocates funds to a variety of management activities, and road decommissioning is one of those activities. Benefits associated with road decommissioning include improved wildlife security, and soils and watershed benefits. As previously mentioned, the Forest must decommission roads to comply with requirements of the Forest Plan.

### **#452 Public Concern: The Final EIS should map proposed temporary roads.**

Road construction is one of the more significant aspects of a project in terms of environmental effects, even temporary roads (road construction greatly increases the possibility of erosion and sediment transport), and so the locations of proposed temporary road construction should be clearly displayed. We did not see the specific location on the maps of the proposed 0.9 miles of temporary road that will facilitate logging in units, 3, 8, and 9. It would be helpful if the location of the proposed temporary road in relation to harvest units and streams and drainage channels was shown on the alternatives maps.

**Response:** See response to comment #450.

### **#453 Public Concern: The Final EIS should include an economic impacts analysis of road closures.**

I am against any road closure until an economic impact analysis has been completed for the road to be closed.

**Response:** Road closures generally result in lower levels of road maintenance that in turn typically result in lower maintenance costs. By comparison, road decommissioning typically costs about \$5000.00 per mile. When that cost is spread over twenty years (with interest) and compared to the cost of maintaining a road in maintenance level 1 (basic custodial care to protect the road investment and to keep damage to adjacent land and resources to a minimum) or maintenance level 2 (basic care of level 1 plus logging out, brushing out, and restoring road prism as necessary to provide passage), the cost in each case is very similar, and is a little over \$400.00 per year per mile.

### **#454 Public Concern: Where necessary, the Flathead National Forest should simply close roads rather than decommissioning them.**

Decommissioning of roads within the Big Creek drainage may be necessary. However, the main issue with road density and habitat security seems to be motorized use and the associated disturbance to wildlife. The mere existence of a road prism that has naturally stabilized through revegetation does not seem to be an aggravating element to wildlife security. Society of American Foresters supports methods of road decommissioning that retain as much of the "capital investment" already made in the road as possible. Since many of the roads identified for decommissioning are within MA15, it is not beyond the reasonable

expectation that sometime in the future, these roads may once again be needed for forest management activities. The increased cost of timber management due to lack of adequate road systems is not consistent with the MA15 objective of "emphasizing cost-efficient production of timber."

**Response:** Road closure and road decommissioning are both integral parts of Forest Service road management strategy. The Flathead National Forest decommissions roads to meet Forest Plan direction and objectives. Decommissioning of roads provides soils and watershed benefits, and benefits to wildlife security. Fifty-six to eighty-seven miles of road decommissioning is acknowledged in the vegetation section under access for timber management. Access for future timber management is addressed in that section. Numerous comments in the Wildlife section of this chapter also address this comment.

**#455 Public Concern: The Final EIS should provide additional Open Road Density data and documentation.**

What is and what would be the Open Road Density in the project and cumulative effects analysis areas? Are the figures in the DEIS based on ground-truthing and thorough analysis?

**Response:** The open road density for the two grizzly bear subunits were displayed on page 2-21, 2-27, 2-35, and 2-40 in the DEIS. These numbers have been checked and are displayed in the FEIS. The road system in these two areas have been extensively examined both before and after the fire. The analysis is based on both ground inspections and GIS mapping.

**#456 Public Concern: The Final EIS should describe and provide the locations of all roads in the project area.**

As per Forest Service Manual 7703.1 and 7711.2, has the Forest documented each road in the project area? A summary of all roads—temporary, system, non-system, other public and private, etc.—and their locations is requested for inclusion in the environmental analysis.

**Response:** We have identified roads in the project area on the maps in the EIS and in the project record. If an unclassified road (or non-system as is referred above) is discovered in the project area, we will take efforts to eliminate that access, as required under the National Forest Management Act.

**#457 Public Concern: The Final EIS should clarify the time frame for obliterating and revegetating roads.**

When will unnecessary roads be obliterated and revegetated, as required by NFMA?

**Response:** An implementation schedule has been prepared for decommissioning which addresses when each road would be decommissioned (this schedule is included in the project record). Page 2-8 of the DEIS stated that road decommissioning would be completed by late autumn 2009.

**#458 Public Concern: The Final EIS should include methods for and locations of road closures.**

Locations of road closures should be revealed, the method of closure, and what, if any, traffic would be allowed on the "closed" roads.

**Response:** This information is incorporated into the description of each alternative, which are contained in Chapter 2 of the DEIS and FEIS.

**#459 Public Concern: The Final EIS should clarify the degree to which roads and other motorized routes are monitored.**

What degree of monitoring of roads, non-system routes, motorized routes, other access routes, and off-road riding areas and motorized use has occurred?

**Response:** Visual observations by Flathead National Forest employees will indicate if motorized use of low use routes is indeed low, or if there are indications of need for more extensive monitoring efforts.

**#460 Public Concern: The Flathead National Forest should implement proposed decommissioning of roads in the Big Creek Watershed.**

I am writing to voice my opinion in favor of restoring the Big Creek Watershed through thorough road decommissioning going beyond the Moose Post Fire Project Draft Environmental Impact Statement (DEIS). I want the roads fully decommissioned by removing culverts, and any other measures that will assure that these decommissioned road cannot be used by either motorized or non-motorized traffic.

**Response:** All of the action alternatives include road decommissioning to address Forest Plan requirements. Alternatives 2, 4, and 5 propose removal of all stream-aligned culverts on decommissioned roads while Alternative 3 would include a project-specific amendment that would allow us to leave in 10 specific stream-aligned culverts on decommissioned roads. These roads would still include features like berms and other obstructions to ensure that wheeled motorized access does not occur on these roads.

**#461 Public Concern: The Final EIS should exceed the minimum road decommissioning values defined in Amendment 19.**

There are inherent conflicts in Forest Service proposed actions with regard to full compliance with Amendment 19, the negotiated Winter Recreation Agreement and this proposed action. This, unfortunately, complicates the Moose decision. The Moose Post Fire DEIS suggests a project specific amendment to Amendment 19 that modifies the definition of a decommissioned road to allow "stream-aligned culverts." I would suggest that the Flathead National Forest go beyond meeting the intent and numerical balance point of Amendment 19 and look for additional decommissioning opportunities that exceed the minimum values of Amendment 19, within affected grizzly bear subunits. This approach may off-set the need to tamper with Amendment 19.

**Response:** Alternative 4 goes beyond Forest Plan Amendment 19 requirements, and thus responds to your concerns.

**#462 Public Concern: The Flathead National Forest should decommission enough roads to comply with the Forest Plan and the Watershed Restoration Plan.**

The Watershed Restoration Plan calls for 75 miles of road reclamation not including the 19 miles of road decommissioning to be done under the Big Mountain Record of Decision. (See WRP at page 6 and 35) Only one action alternative, Alternative 4 meets (and actually exceeds) the WRP road reclamation target. The other three action alternatives fall far short with only 56 and 57 miles of road reclamation. In addition, the road reclamation process in the WRP includes; 1) water barring of the entire road length; 2) removal of the perennial and intermittent stream culverts; 3) the construction of an earth berm at the beginning of the road segment; and 4) re-vegetation of the soils disturbed during the water barring and culvert removal process. Alternative 3 contains 9 miles of roads that are proposed for decommissioning but will not actually be decommissioned because culverts will either be upsized, or not fully excavated and removed. So in essence, these roads will not be decommissioned in compliance with the Forest Plan or the WRP.

**Response:** Thank-you for identifying that error in the Watershed Restoration Plan. The total amount of roads to be decommissioned in Big Creek are a combination of the 19 miles addressed in the Big Mountain Expansion EIS and the 56 miles proposed in the Moose Post-fire Project, thus the 75 miles of decommissioned roads. The amount and

location and initial location of the roads proposed for decommissioning in Big Creek was an outcome of the Big Creek Geographic Unit – Ecosystem Analysis at the Watershed Scale (November 1999). This was well before the 2001 alternative development for the Moose Post-fire Project. The criteria at that time for determining which roads were to be proposed for decommissioning was based on both wildlife security and watershed needs. The description for a decommissioned road in the Big Creek Watershed Restoration Plan was based on the Forest Plan direction. The Watershed Restoration Plan does not undergo NEPA as the Forest Plan does; therefore the site-specific amendment to the Forest Plan proposed in Alternative 3 would allow for compliance with the Forest Plan and ergo the Watershed Restoration Plan.

**#463 Public Concern: To comply with Amendment 19 and to mitigate for the Winter Recreation Agreement, the Final EIS should prohibit motorized use on minimally used trails.**

(3-247): "About 6 miles of this trail network are open to motorized use, with the remainder limited to non-motorized access. A study conducted by the FNF demonstrated that this trail network receives very little motorized use." (3-269) "In addition, trails 194 and 255, which are open to motorized use, received low levels of motorcycle use. Long term plans are to reopen these trails." Consideration should be given to de-motorizing these trails in order to comply with some of Amendment 19 and mitigate for the WRA.

**Response:** See response to comment #377.

**#464 Public Concern: The Flathead National Forest should fully implement previous road decommissioning decisions before considering new agreements.**

It's very important that the purpose and intent behind previous road decommissioning decisions be fully implemented before new agreements are taken into account.

(3-183) "The Big Mountain EIS-ROD, 1995, has identified and authorized 35 miles of road decommissioning. Approximately 16 miles of these roads have been decommissioned in the recent past. For the 2002 field season there are 4.7 miles of decommissioning planned in upper Big Creek, and 8.2 miles in Skookoleel Creek." The Forest Service has to stand by the purpose and intent of the Big Creek EIS-ROD.

**Response:** Implementation of previous decommissioning decisions continues. The work in the Skookoleel drainage moves those roads toward decommissioned status. The implementation plan assembled for the Moose Post-Fire Project will complete that work under a contract expected to be awarded in 2005.

**#465 Public Concern: The Flathead National Forest should maintain existing road access.**

I want to see the roads that are now open, remain open: no closure to Moose Lake, no closure to Warner Peak area, no closure of the road over Miganus Divide from Big Creek.

**Response:** See response to comment #203.

**#466 Public Concern: The Flathead National Forest should reopen roads to ensure emergency vehicle access.**

Too many roads have been closed!!! We need to reopen many of these if nothing else for emergency vehicle access.

**Response:** See response to comment #203.

**#467 Public Concern: Due to its lack of legal and moral authority, the Flathead National Forest should reopen road systems.**

You and your agency have no "legal" or moral authority to implement these closures, therefore, on the grounds of their "illegal" basis I demand you reopen these and other illegally closed road systems. Please know assuredly, "this" is not a matter which you or your agency can expect to quietly just go away! Too many people's lives and livelihoods have been affected.

**Response:** See response to comment #203.

**#468 Public Concern: To comply with the Administrative Procedures Act, the Final EIS should include an alternative that obliterates fewer roads.**

The Flathead National Forest violated the Administrative Procedures Act in preparing the DEIS by making arbitrary and capricious decisions. The decision to examine in detail alternatives that obliterate more miles of road than originally proposed, but no alternative that examines destroying fewer miles was biased and arbitrary and capricious.

**Response:** The alternatives presented in the EIS do not constitute "decisions" under the law referenced. In addition, one of the alternatives (Alternative 3) displayed in the DEIS proposes less road closures than what we initially proposed back in January. Road decommissioning in the Moose project area is required to meet Forest Plan standards.

**#469 Public Concern: To comply with the Administrative Procedures Act, the Final EIS should exclude publicly opposed road obliteration.**

The Flathead National Forest violated the Administrative Procedures Act in preparing the DEIS by making arbitrary and capricious decisions. The decision to keep road obliteration as part of the Moose Fire DEIS decision despite public input was arbitrary and capricious.

**Response:** See response to comment # 468.

**#470 Public Concern: Because Amendment 19 grizzly bear mitigation standards have been met, the Flathead National Forest should not close or obliterate roads.**

The Big Mountain EIS stated that all Amendment 19 standards for grizzly bear road mitigation in the area had been met. Therefore, these roads should not be subject to closure or road rip in the Moose Salvage project.

**Response:** The road access changes involved in the Big Mountain Record of Decision were intended to improve grizzly bear habitat and to show progress towards Amendment 19's motorized access standards. According to the Big Mountain decision, the road access changes "will result in reduced open and total motorized access density" in three grizzly bear subunits, but would not meet the five or ten-year access density standards from Amendment 19. The Moose Post-Fire Project took a more comprehensive look at road management in two of the subunits than what was involved in the Big Mountain decision. The road strategy for three out of the four action alternatives in the Moose Post-Fire Project along with the road strategy involved in the Big Mountain decision would meet Amendment 19's access density requirements in full. For further information on the need to decommission roads, refer to the Wildlife section of this chapter.

**#471 Public Concern: The Flathead National Forest should reassess its plans for Road 5272 under Alternative 4.**

(2-36) Alternative 4. "In addition, Elelehum Road 5272 would be decommissioned and then converted to a low use trail allowing motorcycle use." This would be unacceptable for various reasons, especially as it contributes to Total Open Motorized Road Density.

**Response:** See response to comment #377. In the DEIS, the Elelehum Road is proposed as use as a low-use motorized (motorcycle) trail under one alternative only. Upon review, we determined that motorized use would not be allowed on this decommissioned road during the non-denning period, according to the Flathead Forest Plan

Amendment 19 standards. Therefore the FEIS was updated to state that this road would be closed to all motorized use during the non-denning period in Alternative 4, in compliance with Forest Plan requirements. The other action alternatives allow this road to be open seasonally to motorized use.

**#472 Public Concern: The Flathead National Forest should consider using helicopter logging to eliminate the construction of temporary roads.**

(3-21) Alternative 4. "Three units requiring temporary roads in the proposed action would be logged using helicopters instead of a ground-based system where road access would be necessary. This changes 106 acres of ground-based logging to helicopter logging, in units 3b, 8b and 9b." It's hard to believe that only .9 miles of temporary road would be built in all cases in the other alternatives. Is this (Demers Ridge) the area where the .9 miles of temporary road would be built? In which case it might be preferable to eliminate the .9 miles of temporary road and just use helicopter.

**Response:** See response to comment #450. All proposed temporary roads have been eliminated in the FEIS.

**#473 Public Concern: The Final EIS should ensure that road closures and the Winter Recreation Agreement are defensible and can be implemented.**

(3-104) Alternative 2." The Lookout Road 803 would be closed on a year-round basis with a gate, just south of Big Creek." This is a good idea! The importance here is that year-long roads allow for administrative use, but gates are sometimes vandalized and roads used illegally. This project and actions like the Winter Recreation Agreement need to be implementable and defensible.

**Response:** The Moose Post-fire Project analysis is being conducted to provide the decision maker with a basis to make choices that are indeed capable of being implemented. The Winter Recreation Agreement is outside the scope of this decision.

**#474 Public Concern: The Flathead National Forest should maintain and reconstruct trails with hand tools.**

(3-3) "Trail maintenance/reconstruction. These trails will receive clearing, hazard tree removal (on either side of the trail or over the trail where necessary), water bars and retread." Concern here is that trail work be done in conventional (hand tool) method and not utilize a trail dozer creating a wider tread as is proposed for the Elelehum Road in Alternative 4 with road conversion to motorized trail.

**Response:** All trail work (which is not addressed as a direct action in this project) would be done with minimal impact to the ground and likely would be done with hand tools or chainsaws.

## ADDITIONAL COMMENTS

The following comments were received after the 45-day comment period on the DEIS. We considered all comments received after the comment period and have addressed those comments in the next section that were not already covered above.

**A. Public Concern: The Flathead National Forest should revise its Forest Plan because decommissioning roads has caused a changed condition in some management areas.**

A decision to obliterate roads in Management Areas designated for cost effective timber management with roads is such a significant action that it creates changed conditions requiring Forest Plan revision.....A decision to obliterate roads in Management Areas designated for cost effective timber management with roads is in fact a change to the Forest Plan but no site specific management area changes are proposed or acknowledged in the DEIS.....The Forest Plan is 17 years old and has expired under provisions of the National Forest Management Act. NFMA requires the Forest Plan to be revised every 10 years but no later than 15 years. Significant changes to an expired Plan are illegal and public resources must be used in an integrated

revision of the Plan as required by NFMA....Despite public input, there is no maps disclosing proposed timber salvage relative to Forest Plan Management Areas and goals.

**Response:** As we are required to do under a site-specific analysis, we have addressed the effects that road closures have on timber management in the project area on pages 3-20 and 3-21 in the DEIS. Your comment about road obliteration changing the intent of management areas designated for “cost effective timber management” is a Forest Plan issue and outside the scope of this project. Road decommissioning (obliteration) is required in the Moose project area to meet the direction provided in Amendment 19 to the Forest Plan. Amendment 19 did not include any adjustment to the management area designations of the Forest Plan as a result of road decommissioning (obliteration). The rationale provided for this determination is found on page 134 and 135 of Amendment 19:

“The current Management Area designations are compatible with grizzly bear recovery goals. Management area direction must be read in its entirety and in conjunction with Forest-wide goals, objectives, and standards.

The Forest Plan management direction for each individual Management Area including those where timber harvesting is allowed, contains a Standard stating: “[a]dhere to the Forest-wide Standards for Grizzly Bear management in occupied Grizzly Bear habitat.” Amendment 8, which was approved on July 31, 1989, establishes that all Forest Plan standards are not discretionary. This amendment further clarifies that standards for threatened and endangered species conservation are mandatory, and thus take precedence when there are conflicting uses. In Amendment 9, which was also approved on July 31, 1989, the Flathead National Forest added the entire Interagency Grizzly Bear Guidelines to the Forest-wide standard for grizzly bear.

In addition, the Amendment 19 alternatives that would establish additional objectives for grizzly bear habitat management also propose amending the Forest Plan's Forest-wide General Standard No. 1 to affirm that the proposed habitat objectives are non-discretionary requirements the Terms and Conditions of the U.S. Fish and Wildlife Service's January 9, 1995 biological opinion that supersede any conflicting or inconsistent management direction contained in the Forest Plan.

The Forest Service concludes that Management Area allocations, including those such as MA-15 that allow timber harvest when all other standards are met, are compatible with Management Situation 1 grizzly bear recovery areas. In these areas, timber uses clearly do not dominate over the bear.”

Finally, the management area for each proposed salvage unit was identified in the DEIS on pages 2-17 through 2-18 and in the salvage unit tables in Appendix A.

**B. Public Concern: The final EIS should include an alternative that excludes road decommissioning and includes more temporary roads and more use of mechanical harvesters and forwarders.**

Develop and select an alternative that does not obliterate any public roads and increase viable timber salvage opportunities by using more temporary roads, mechanical harvesters and forwarders that can economically salvage timber 6 inches and larger while creating slash mats to retard soil movement.

**Response:** The response to comment #15 addresses the first part of this comment. We did consider the use of other types of ground-based equipment, but many portions of the fire area are quite steep and not suitable for even harvesters or forwarders. In addition, several units that were burned with high fire severity (effects to vegetation) lack fine branches, needles and twigs, important components of an effective slash mat for reducing soil effects. In order to compensate for this, we have proposed either helicopter logging or winter logging to minimize the amount of soil disturbance off skid trails.

**C. Public Concern: The final EIS should disclose burn severity related to past timber harvest types and roadless areas.**

Despite public input, there is no disclosure of burn severity relative to past timber harvest types or roadless boundaries.

**Response:** Past harvest and burn severity were discussed in the DEIS on page 3-13. They are also included in the FEIS.

**D. Public Concern: The final EIS should disclose the effects of road decommissioning on future fire suppression costs, probability of escaped fires, damage to soils and other resources.**

Despite public input, there is no disclosure of site specific or cumulative effects of road obliteration on future fire suppression costs, probability of escaped fires, damage to soils and other resources.

**Response:** The effects of roads on the landscape are described in the DEIS in various places; the effects that roads have on timber management is discussed on page 3-20 and 3-21; the effects of roads on soils is described on pages 3-165 and 3-166; the effects of roads on hydrology is discussed on pages 3-196 through 3-198, pages 3-200 through 3-205, and pages 3-206 through 3-209; the effects of roads on fisheries is described on page 3-237, and on pages 3-239 through 3-241; the effects of roads on recreation are discussed on pages 3-273 through 3-276; and the effects that roads have on fire suppression is discussed on pages 3-93 and 3-94. These effects are also described in the FEIS.

**E. Public Concern: The final EIS should disclose volume or value per acre of the trees within the burn area.**

Despite public input there is no disclosure of timber stand volume or value per acre within the burn area.

**Response:** Cruise data was not complete at the time the DEIS was published. Updated volumes per unit are included in the FEIS.

**F. Public Concern: The final EIS should disclose the effects road decommissioning has on costs and tradeoffs related to timber harvests, logging, reforestation, timber stand improvement, and insect and disease control.**

Despite public input there is no disclosure of site specific costs and tradeoffs on timber harvests, logging, reforestation, timber stand improvement, insect and disease control, caused by road obliteration.

**Response:** The effects of road decommissioning on timber management are addressed in the Vegetation section of the DEIS and FEIS. Costs were not addressed, as there are no reasonably foreseeable timber management actions in the project area, and therefore nothing on which to base cost estimates.

**G. Public Concern: The final EIS should disclose the effects of road decommissioning on long-term productivity.**

There are no required disclosures of the effects of road destruction on the maintenance and enhancement of long term productivity.

**Response:** Road decommissioning would not change site productivity. Activities that could improve stand productivity, such as precommercial thinning, would become more expensive and, in some cases, may be foregone altogether.

**H. Public Concern: The final EIS should disclose the effects of road decommissioning on insect and disease control.**

Despite public input, there are no issues identified ...on effects of road obliteration on insect and disease control.

**Response:** As described in the FEIS, insect and disease control will be made more difficult and expensive in areas that no longer have road access.

**I. Public Concern: The final EIS should disclose the effects of future fuel loading, continuity, and fire hazards within acres not harvested.**

Despite public input, there are no issues identified...on effect of acres not harvested on future fuel loading, continuity and fire hazard.

**Response:** The effects of the no action alternative on future fuels loading and fire behavior was discussed in the DEIS on pages 3-90 and 3-91.

**J. Public Concern: The final EIS should disclose the effects of road decommissioning on future fire suppression costs and probability of escaped fires.**

Despite public input, there is no disclosure of site specific or cumulative effects of road obliteration on future fire suppression costs, probability of escaped fires...

**Response:** Future fire suppression costs are discussed on page 3-93 of the DEIS and the risk of escaped prescribed fires is discussed on page 3-94 of the DEIS.

**K. Public Concern: The Flathead National Forest should remove all culverts from decommissioned roads.**

It is precisely because culverts like this [54" Nokio Creek culvert on Road 114] fail even on open roads, where the culverts are easily monitored and maintained, that culverts must be removed from decommissioned roads, where they are difficult to monitor and maintain. Indeed, the Forest Service's own manual on road decommissioning warns against leaving culverts and portions of road prisms in even low risk crossings by stating "it is realized that structures and embankments not removed may be inaccessible for maintenance or repair after road obliteration work is completed."

**Response:** Thank-you for your concern and comment. We agree with you that periodic monitoring of any culvert is necessary and especially if they occur behind a berm. If a decision is made to allow for some culverts to remain in decommissioned roads than those culverts become a very high priority for annual monitoring to determine if maintenance is needed. Refer to FEIS Appendix E for information about culvert monitoring.

**L. Public Concern: The final EIS should include the removal of benches following culvert removal.**

Benches can help channel water and sediment directly to the stream channel.

Leaving the bench in the first place runs contrary to Amendment 19 and the definition of "decommission" developed by at the interagency Forest Ecosystem Management Assessment Team. The FEMAT defines decommission as "to remove those elements of a road that reroute hillslope drainage and present slope stability hazards."

Snowmobiles operating on benches or slopes near streams, especially when encouraged to do so during low or no snowpack by the existence of man-made stream crossing structures, may indeed cause substantial impacts to vegetation, soils, water quality and fish.

**Response:** If designed properly (with a water-bar at the top of the slope) there should be no additional sediment potential from a benched crossing than the "standard decommissioned culvert site."

A project-specific amendment to the Forest Plan would allow 10 specific culverts to remain in place in specific decommissioned roads currently in the Forest Plan. Retention of these 10 culverts would then comply with the amended Forest Plan. As prescribed by the National Forest Management Act, the Forest plan provides management direction for the Forest, not FEMAT.

Anytime a snowmobile operator is causing resource damage (i.e. soil erosion) than that person is breaking the law. There is legal authority in the Code of Federal Regulations to cite a person doing resource damage to trails or roads. Please refer to the response to comment #334.

**M. Public Concern: The Flathead National Forest should not remove slash and other sediment-trapping material from decommissioned roads to facilitate snowmobile access.**

Further impacts to water quality and fish can be expected if slash and other sediment-trapping material is removed from decommissioned roads near streams in order to facilitate snowmobile access or if such material is scuffed off by snowmobile use. All of the above measures are also certain to facilitate undesired wheeled motorized vehicle use.

**Response:** The same erosion measures would be done on the bare ground on decommissioned roads that do not have snowmobile use as the ones that may have snowmobile use. There would be no special slash removal on decommissioned roads identified as snowmobile routes. Snow cover would allow passage of snowmobiles over slash material.

**N. Public Concern: The final EIS should disclose the effects of road decommissioning on the entire spectrum of recreation.**

Road decommissioning is only mentioned as an issue relative to snowmobiling when public input was concerned with lack of access relative to...all types of recreation.

**Response:** The effects of road decommissioning on the spectrum of recreation opportunities was discussed in the DEIS on pages 3-273 through 3-277.

**O. Public Concern: The Flathead National Forest should reassess its finding that the proposed action is consistent with the Flathead County Comprehensive Economic Development Strategy.**

The finding that the proposed action is consistent with the County Economic Development Strategy was arbitrary and capricious.

**Response:** The commenter has not indicated where and how the proposed action is inconsistent with the Flathead County Comprehensive Economic Development Strategy.

**P. Public Concern: The final EIS should analyze the effects of the costs of alternative logging systems vs. helicopter logging.**

Despite public input, there is no or other analysis of alternative logging systems to helicopter logging when it was pointed out that relying on helicopter alone for the majority of the proposed salvage would be uneconomical and doom the salvage to failure. With no site-specific information, it appears only about 1600 acres of proposed salvage is economically viable. The DEIS misleads the public as to viability of the alternatives.

**Response:** The FEIS includes the results of an economic viability analysis and a comparison with recent salvage logging on portions of the Coal Creek State Forest within the Moose Fire perimeter. Both indicate the proposed sales are presently economically viable.

**Q. Public Concern: The final EIS should disclose the effects of road decommissioning on custom, culture, and quality of life.**

There is no required social science analysis of effects of significant road obliteration decisions on custom and culture or quality of life.

**Response:** The effects of the proposed action on various human uses which in turn effect the custom, culture and quality of life of forest users are reported in the various resource sections in Chapter 3 of the DEIS and FEIS.

**R. Public Concern: The final EIS should disclose the cumulative environmental, economic, and social effects of proposed and past road decommissioning, including effects from Amendment 19 decommissioning.**

Despite public input there is no disclosure of cumulative environmental, economic or social effect of the proposed road obliteration decision along with past obliteration, not even a disclosure of actual cumulative miles closed and costs of Amendment 19 decommissionings to date.

**Response:** Since 1995, several hundred miles of road have had been decommissioned on the Forest; several hundred more miles of road across the Forest are expected in the near future to be decommissioned to fully meet Amendment 19. Many of the roads that have been decommissioned were already restricted to wheeled motorized public use and it is anticipated that future road decommissioning may follow this same trend. In the DEIS, we acknowledged that the proposed road management changes included in the alternatives would have effects on fire suppression response time, vegetation management, recreational access, etc. Future road decommissioning actions on the Forest may likely change initial attack on fires to more aerial means, cause changes to logging systems that can operate further away from a road like a forwarder or helicopter, and reduce motorized recreation opportunities. Other recreationists may also be affected since access would be reduced for stock, mountain bikers, and hikers as vegetation grows in on decommissioned roads. As we mentioned in comment #453, road decommissioning typically costs about \$5000.00 per mile.

**S. Public Concern: The Flathead National Forest’s access management program has contributed to a larger geographic distribution of grizzly bears, but should also recognize the social implications that results from restricting roads to public access.**

Access management in grizzly bear habitat continues to be a major issue in both the biological and social arenas. Montana Fish, Wildlife and Parks realizes that the management of motorized access is an important tool in the management and conservation of grizzly bears, and we recognize the importance of providing secure habitat for bears. The results of the South Fork Grizzly Bear Project contributed to the development of the access standards that were implemented by the Flathead National Forest. We have also been able to observe how the public has responded to more restrictive access management programs and have a better understanding of the effects of Amendment 19 to the Flathead Forest Plan on grizzly bear populations over the past seven years. It is our belief that the Flathead National Forest access management program has contributed to a larger geographic distribution of grizzly bears in northwest Montana, and perhaps an overall population stabilization and subsequent increase. Ecosystem-wide grizzly bear population sampling would confirm or reject this notion....Upon reviewing the literature and decisions regarding the IGBC Task Force Report and Amendment 19 standards, two common themes were present, but weren't really taken into consideration. Those two themes were 1) that the information presented in the 1993 Mace and Manley Annual Report was preliminary, and that the final results would be presented in the Final South Fork Project Report; and 2) that the social implications resulting in the implementation of the standards need to be taken into consideration. This important consideration is even restated in the Final South Fork Report on page 73: "An important balance must be met between grizzly bear security and survival, and human sociological and economic concerns... Innovative road access programs that allow short-term (e.g., two weeks) access by humans would serve to build public acceptance towards this valuable wildlife species."

**Response:** We also believe that our access management program on the Flathead National Forest has been of benefit to grizzly bears and other wildlife species. We also fully realize the social implications that our road closures and decommissioning has had on the public over the last several years. Flathead Common Ground, a public collaborative group, was participating in the early planning stages of a project in the Big Creek drainage a couple of years prior to the Moose Fire and wanted to see a road management alternative that emphasized more seasonal road closures rather than permanent road closures. They believed that seasonal closures would promote more social acceptance towards these closures and still provide some improvements in grizzly bear habitat. The road management plan in Alternative 3 best approximates this strategy.

**T. Public Concern: The Flathead National Forest should choose Alternative 3 to best meet the needs of grizzly bears and the public's desire for more road access.**

With regard to the proposed Moose Post-Fire Project, Montana Fish, Wildlife and Parks believes that Alternative 3 would meet the needs of the local grizzly bear population and at the same time meet the needs of the public with regard to their desired continued use of certain roads within the analysis area. We realize that selection of Alternative 3 does present some additional challenges involving the Big Mountain Record of Decision and compliance with Amendment 19. However, with the best interest of grizzly bear management and conservation in mind, the potential social backlash against grizzly bears and access management by proceeding with other more restrictive alternatives may in fact have more of a negative biological impact on the local grizzly bear population than any projected increased habitat security resulting from further access restrictions.

**Response:** Thank you for your comment; the decision maker will consider your comments when selecting actions related to road management.

**U. Public Concern: The Flathead National Forest should consider effects to leaving culverts in place on Road 1655 following road decommissioning.**

My concern is the proposal to leave road fill on 18-19 culvert crossings on Road #1655 after the road is blocked from vehicle use. As you're well aware, open roads allow for the regular maintenance needed to minimize sediment introductions. Once vehicle traffic is restricted it is not possible to regularly inspect, clean or repair culvert crossings. Existing culverts in this road are nearing the end of their life span and are deteriorating. There is a high likelihood that perennial crossings will soon need either culvert replacements or removals in the near future.

**Response:** All the culverts on road #1655 that did not meet the 100-year flow requirements of INFISH have been upsized this fall (2002). All of the remaining culverts have been cleaned and had any materials from the inlet areas removed. Currently a culvert monitoring/maintenance plan for bermed roads has been developed and is being reviewed by the U.S. Fish and Wildlife Service (refer to Appendix E of the FEIS). The combination of these activities will reduce the risk of a culvert failure on this road significantly.

**V. The Flathead National Forest should consider different road management options to reduce potential stream habitat degradation.**

In my opinion, there are a number of road management options for USFS that reduce the potential for degradation of stream habitat. These include leaving the road open to vehicle traffic and continuing regular road maintenance, decommissioning the road and removing all road fill at stream crossings, or some intermediate option dependent on what are future egress needs and by what type of vehicle. Whatever the decided type of future road use, there is an appropriate action to minimize risk of fine sediment introductions to essential bull trout habitats. For example, if it is determined that there will only be snowmobile use, there are numerous ways to provide safe snowmobile crossings, minimize risk to fish habitat and not leave road fill over culverts.

**Response:** There are several road management scenarios being analyzed in the DEIS and FEIS for the roads in Big Creek. The potential scenarios have had the environmental effects e.g. sedimentation, wildlife security analyzed and described. From a water quality perspective it is the goal the Forest Service to minimize the potential sedimentation from any non-decommissioned road if it is open, gated, or bermed. Once the road management alternative is picked then the appropriate measures to minimize sedimentation can be applied.

**W. The Flathead National Forest does not need culverts over ephemeral streams for snowmobile use but will need a structure for perennial streams.**

As we discussed, ephemeral streams do not require culverts for winter crossing, since no water will be flowing at these 11-12 sites. Therefore, all culverts and associated fill on ephemeral streams can be removed and snowmobiles will pass safely. This will remove large volumes of fine sediment, which have potential to wash into downstream habitats. I have been told that perennial streams can create hazardous crossings until snow bridges form late in the season, so some type of crossing is required. If only snowmobiles will cross these 7-8 sites, minimal structures can be constructed. Similar to decommissioning, all

road fill can be removed and 3:1 back sloping can be done prior to installation of a crossing structure. This will remove the future threat of road failure and associated sedimentation and will minimize the needed length and width of the structure. Crossing structures include hardened fords of rock or cement rails, shorter culverts covered with sediment free rock, and bridges. The size of the stream, site characteristics, and cost will likely determine which type is employed.

**Response:** If a road is to be decommissioned then removing all of the ephemeral stream culverts is standard procedure, whether or not the road is to be part of the snowmobile trail system or not. If a road is to remain on the road network system and is bermed for wildlife security then removal of the ephemeral stream culverts and perennial stream culverts can be considered in a high-risk culvert failure situations. If there were little risk of a culvert failure typically the ephemeral and perennial stream culverts would not be removed, because the road is planned to have use in the next 1 to 2 decades. Sediment reduction measures that you describe can be implemented on bermed roads if the managers decide that is an appropriate treatment.

#### **X. The Flathead National Forest should establish road access standards for snowmobile crossings through planning or consultation to protect water quality and bull trout habitat.**

Ideally, these concerns would be met with standards established through a programmatic level planning or consultation on bermed/gated/decommissioned roads. This would clearly specify actions required to protect water quality and bull trout habitat. Until this is completed all recent and upcoming road closures and associated construction activities will need to be revisited in the near future to assure that they meet those requirements. In the meantime, if a road will be closed to vehicle traffic, either through decommissioning or berming, but will require winter snowmobile crossings on perennial streams, an appropriate type of crossing can be installed without leaving large volumes of sediment in road fills over culverts. This will provide safe winter travel and not compromise important bull trout habitat or water quality.

**Response:** All of the proposed actions of the chosen alternative, including road treatments will be consulted with the U.S. Fish and Wildlife Service as to their effect to the bull trout. Designs of snowmobile stream crossings (where culverts are removed) are designed to remove fill material from the stream management zone. In the case of the 10 culverts proposed for retention on decommissioned roads under Alternative 3, only a minimum amount of fill would remain on top of the culverts, so that snowmobiles could pass over the stream crossing with adequate snow. Existing fill material would be reduced by a significant amount.

Again as discussed in the previous response managers on a site-specific basis can make decisions on the treatment measurements that will reduce sedimentation potential.

#### **Y. The Flathead National Forest should prevent wildfire to preserve T&E habitat.**

In the Moose fire area there are three if not four T&E species. This gives rise to the change in how the North Fork is valued. Before the late 80's, the NF had value because of timber harvest. Now the NF must be valued because of its habitat for T&E species. The "Post Fire Assessment" does not mention anything about how the next dry season is to be handled.

..I would like to see the USFS give more power to District Rangers in charge of Forests that house T&E species. During those low moisture years in districts like the NF I want the District Ranger to be able to put his entire personnel out in the woods on eight, ten or twelve hour shifts looking for sparks or sniffing for smoke. The delay time between spark and upper FS management response is just too slow.

**Response:** We have well-organized initial attack crews on the district that receive more staffing when the fire hazard increases due to weather conditions.

#### **Z. The final EIS should provide a cost benefit analysis of wildfire vs. controlled fire.**

I would like to see a cost benefit analysis of wildfire vs. controlled fire prepared by an "objective" team, perhaps from the Government Accounting Office. It just seems odd to me that losing habitat that takes many, many years to create to a forest fire can be good.

**Response:** This request is outside the scope of this project analysis.

**AA. The Flathead National Forest should monitor for natural logjams.**

I would like to see lower Big Creek and lower Coal Creek monitored for natural logjams that will probably result from dead trees falling in the streams. To not be able to fish either creek because of bull trout and then lose them anyway is...interesting.

**Response:** There were stream surveys done following the fire in October 2001 as well as August 2002 in the portion of Big Creek in the fire area, that described large woody debris i.e. logs. There is a monitoring plan proposed in Appendix E that continues this type of survey for additional times each 3 to 4 years. Note it is not legal to fish in either Big or Coal Creeks.

**BB. The Flathead National Forest should remove wolves from Big Creek to reduce their effect on future grizzly bears and lynx.**

Lastly, a good friend was telling me about hiking a northern GNP trail and coming upon a rest area where he and his wife joined two other couples. While there one of the other hikers made the comment about not seeing any wildlife. My friend said it was all he could do to keep from yelling at her, "It's the wolves, stupid!". I've had two Forest employees tell me the wolf thing is "a mistake" and "overdone". I suggest you consider taking the wolves out of the Big Creek to reduce their effect on future grizzly bears and lynx.

**Response:** Removing wolves from the Big Creek area is outside the scope of the analysis and not within our authority or jurisdiction.

**CC. The final EIS should document the Montana Department of Environmental Quality's determination that the project will not violate state water quality laws and regulations or cause further impairment of designated beneficial uses.**

I reviewed the **Moose Post-fire Project Draft Environmental Impact Statement** and determined that the project, as described, will not violate state water quality laws and regulations.

Many of the activities proposed in the **Moose Post-fire Draft Environmental Impact Statement** have the potential to affect water quality by increasing sediment delivery to rivers and streams that flow from the forest. These activities include salvage logging; temporary road construction; road maintenance and decommissioning; and culvert removal and replacement...In the **Moose Post-fire Draft Environmental Impact Statement** the Forest Service describes mitigation and forestry best management practices it will employ to minimize or eliminate nonpoint source pollution. The described salvage logging mitigation measures and management requirements meet or exceed state Forestry BMP guidelines and the Streamside Management Zone Act. Project activities, when implemented as described, will not cause further impairment of designated beneficial uses.

**Response:** Thank-you very much for your comment.

**According to NEPA regulations, the next section includes copies of letters received on the draft EIS from Federal, State, and local agencies, and elected officials.**