

## CHAPTER 4. CONSULTATION AND COORDINATION

### Contributors

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This chapter documents public involvement during the scoping of the Proposed Action and review of the Draft EIS for the Sheppard Creek Post-Fire Project.

The Forest Service consulted the following Federal, state, and local agencies along with the Confederated Salish-Kootenai Tribes during the development of this environmental impact statement.

United States Fish and Wildlife Service  
United State Environmental Protection Agency  
Montana Department of Natural Resources and Conservation  
Montana Department of Environmental Quality  
Montana Department of Fish, Wildlife, and Parks

The Forest Service also requested or received input from the following elected officials, agencies, individuals, and organizations on the Proposed Action and Draft EIS. These entities were given the opportunity to provide input during an open house, a field trip to the project site, and through electronic and traditional correspondence. The complete mailing lists used during the Sheppard Creek Post-Fire Project are in Exhibit B.

### Elected Officials

U.S. Senator Max Baucus (Kirby Campbell-Rierson)  
U.S. Senator Jon Tester (Stacy Stone-Manning)  
U.S. Representative Denny Rehberg (Maren Olsen)  
State Representative Bill Beck  
State Senator Jerry O'Neil

### Agencies

Montana Department of Environmental Quality (Andy Welch)  
Montana Department of Fish, Wildlife, and Parks (Alan Wood, Mark Deleray, Tim Their)  
Montana Department of Natural Resources and Conservation (Brian Manning)  
U.S. Environmental Protection Agency (John Wardell)  
U.S.D.I, Office of the Secretary (Robert Stewart)

## Individuals

Albert, Philip	Gray, Darlene Dawn	Pierce, James & Nancy
Anfinson, Verna	Green, Robert & Lynda	Plawman, James & Carolyn
Aquino, Victor & Jeannette	Hall, Gary & Rita	Ralston, Wayne
Armstrong, James & Joann	Hankey, Nell	Rasmussen, Stephen &
Arndt, Elizabeth	Hansen, Carl	Merril Lee
Artley, Dick	Hart, Patricia Ann	Rayias, Maria
Bahner, Aaron & Cammy	Hart, David	Reich, Ronald
Beaver, John	Haynes, Myron & Patrice	Reiter, John & Sharon
Bjornrud, Albert & Teresa	Hill, Eugene & Teri	Rogers, Alan & Cherry
Bowers, Audrey & Ray	Hubber, Margaret	Role, Mark & Kimberly
Boyd, Steven G.	Johnson, Bryce & Ardith	Ryan, Clarice
Braun, Stephen	Juel, Jeff	Sachau, B.
Briggs, Reginald & Donna	Kramer, Kenneth	Salminen, Don & Susan
Brown, Micheal & Dianne	Kreienheder, Richard &	Samuel, Stephanie Ann
Brown, Gigi & Marnell	Amanda	Sanders, Rodney
Buentemeier, Ron	Lacitignola, Joshua	Sanders, Billy Ray
Care, Darrin & Tami	Leppert, Roger & Delores	Sanlorenzo, Candida
Carpenter, Ronald & Michelle	Love, Brad	Shaver, Todd & Barbara
Carter, Sarah	Mahugh, Jeremy	Skinner, Dave
Christiano, Jerri	Marcuvitz, Robert	Skinner, Lee & Marie
Cichock, Thomas	Martin, Jonathan	Sloan, Gary & Mary
Cook, Steven	Martin, Timothy	Slock, Jim
Cormier, Ernest	Mascazine, David	Smilari, John G.
Coulter, James & Tena	Mauhl, Gordon	Speer, Glen & Janice
Courtney, Thomas	McDonald, Micheal & Lori	Stafford, Juanita
Crowe, Gary	McDonnell, Pat	Stocking, Bradley & Karen
Crowe, Kathryn	McDowell, Michelle	Suhr, Esther J.
Cruz, Tina Marie	McGough, Sam	Taylor, Janis
Damrow, Chris	Meek, John	Their, Tim
Diamond, Olivia	Melcher, Arlan	Thompson, Jean
Fauth, Paul	Meyer, John	Threlkeld, Thomas
Field, Kenneth & Arlene	Mico, Paul	Tice, Lisa & George
Fischlowitz, David	Mitchell, Brent	Unser, Delda
Foard, Patrick & Marlene	Moser, Tamara & Wayne	Valenta, Joseph & Carol
Gerrior, Julie	Musser, Mary Lou	Wayman, Samuel
Gibbs, John & Rhonda	Mylander, Elaine	West, David & Lynette
Gilder, Richard & Patricia	Nelson, Richard & Carol	Whitaker, Allen & Pamela
Goldberg, Bill & Chelsea	Niewoehner, Tyson	White, Joshua
Grafe, Dennis & Elizabeth	Olson, Lyle	Wilhelm, Lisa
Grant, Jewel Lea Faith	Ott, Sandy	Winnie, Linda
Gratch, Alan & Sallie	Petersen, John	Zalutsky, Wendy

## Organizations and Businesses

A. American INC PSP & Trust	Montana Logging Association
Alliance for the Wild Rockies	Uken, Paul
Garrity, Micheal	Montana Wood Products Association
American Fisheries Society, MT Chapter	Marceau, Bonnie
Schmetterling, David	O-H Leasing
American Timber Co.	Parkside Federal Credit Union
American Whitewater	Plum Creek Timber Co.
Gangemi, John	Shaw, Eric
CSU Library	Kranz, Jim
Smith, Judy	Smurfit-Stone Container Corp.
The Daily Interlake	Simpson, Jim
Mann, Jim	Sterling Trust Company FBO
F.H. Stoltze Land & Lumber Co.	Zignego, Lee
Roady, Chuck	Swan View Coalition
Boardman, Mark	Keith Hammer
Damrow, Chris	Trout Unlimited, Flathead Valley Chapter
McKenzie, Paul	Farling, Bruce
Flathead Audubon Society	Whitefish Lake Institute
Young, Lewis	Koopal, Mike
Flathead Economic Policy Center	Whitefish Pilot
Daly, Carol	Hanners, Rick
Friends of the Wild Swan	WildWest Institute
Montgomery, Arlene	Naficy, Cameron
Hope Ranch	Women in Timber
Little Switzerland Group, LLC	McKenzie, Holly
Montana Forest Products	
Montanans for Multiple Use	
Hodgeboom, Fred	

## Content Analysis Process for the Draft EIS

The content analysis process used after the proposed action scoping period is described in the Draft EIS. We received 10 comment letters from individuals, organizations, and other government agencies in response to the Draft EIS. These 10 letters contained approximately 170 distinct comments.

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 development process.

A more detailed accounting of the content analysis methods used and a comprehensive list of public concerns can be found in the project record, Exhibit B.

During content analysis, individual concerns were identified for each response received regarding the Draft EIS. Each individual statement made from respondents suggesting an action the Flathead National Forest should consider was identified and compiled into discipline-specific themes. The compiled themes were reviewed by a subject matter expert from the interdisciplinary team for response. The individual concerns and interdisciplinary team member's response to the concerns are displayed at the end of this chapter.

As indicated above, we received response letters or electronic messages from 10 various individuals, organizations, and government agencies during the comment period. The following table provides a list of those commenting and the Project File exhibit number related to each response.

**Table 4-1. List of Commenters on the Draft Environmental Impact Statement.**

<b>File Number</b>	<b>DEIS Commenter</b>	<b>File Number</b>	<b>DEIS Commenter</b>
E-20	Weidensee, Derek	E-25	Flathead Audubon Society Young, Lewis
E-21	Sachau, B.	E-26	Buentemeier, Ronald
E-22	U.S. Department of the Interior Stewart, Robert F.	E-27	F.H. Stoltze Land and Lumber Co. Damrow, Chris
E-23	WildWest Institute Naficy, Cameron	E-28	Montanans for Multiple Use Hodgeboom, Fred
E-24	U.S. Environmental Protection Agency Wardell, John F.	E-29	Friends of the Wild Swan Montgomery, Arlene

## **Distribution of the Final Environmental Impact Statement**

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A letter sent September 2, 2008 to all organizations or persons who participated during scoping or commented on the Draft EIS asked if the participant wished to receive a Final EIS, summary, or electronic copy of the document. In addition, copies of the Final EIS are posted and available for downloading on the Flathead National Forest's internet web site. Notices of Availability were published in the Federal Register and in the *Daily Inter Lake* of Kalispell, Montana. This Final EIS has been distributed to the following government agencies, organizations, or individuals who specifically requested a copy of the document and to those Federal agencies interested in projects of this nature. Anyone wishing to receive the document may request one through the address listed inside the document cover.

U.S. Environmental Protection Agency, Washington, DC  
U.S. Environmental Protection Agency, Helena, MT  
USDA National Agriculture Library, Beltsville, MD  
USDI Office of Environmental Policy and Compliance, Washington, DC  
Planning and Review Advisory Council on Historic Preservation, Washington, DC  
USDA Animal and Plant Health Inspection Service, Washington, DC  
U.S. Army Corps of Engineers, Portland, OR  
USDA Natural Resources Conservation Service, Washington, DC  
Northwest Power Planning Council, Portland, OR  
U.S. Coast Guard, Washington, DC  
Federal Aviation Administration, Renton, WA  
U.S. Department of Transportation, Federal Highway Administration, Helena, MT  
U.S. Department of Energy, Washington, DC

## Preparers

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The following Forest Service Employees assisted with the development of this Environmental Impact Statement:

<u>ID TEAM MEMBER</u>	<u>TITLE</u>	<u>AREA OF CONTRIBUTION</u>
Vince Archer	Soil Scientist	Performed effects analysis of the soils resource and conducted soils data collection in proposed treatment units.
Ema Braunberger	Resource Information Manager	Integrated spatial data with attribute data, along with resource datasets and information, to provide maps and map products in an integrated environment.
Bryan Donner	Planning Team Leader	Provided general project oversight and organization. Responsible for the preparation of the environmental documentation and execution of the public involvement strategy.
Beth Gardner	Fisheries Biologist	Assisted Craig Kendall in the data collection and effects analysis for the Fisheries resource for the DEIS.
Liz Hill	Hydrologist	Assisted Craig Kendall in the effects analysis of the watershed resource for the DEIS.
Linh Hoang	Botanist	Provided oversight and assistance to the effects analyses for the Noxious Weeds and Threatened, Sensitive, and Rare Plants resources.
Kay Izlar	Resource Technician	Contributed to field surveys and finalization of the effects analysis for the Noxious Weeds and Threatened, Sensitive, and Rare Plants resources.
Amy Jacobs	Wildlife Biologist	Performed the effects analysis for the Snags and Downed Wood, Old Growth, Neotropical Migratory Birds and Riparian Habitat, and Threatened and Endangered Species. Contributed to the development of the Mortality Guidelines and Spring/Summer 2008 Field Survey Protocol and development of the Snag/Live Tree Retention Prescriptions.
Lynn Johnson	Wildlife Biologist	Performed the effects analysis for the Big Game and Sensitive Species sections in the DEIS.
Jason Johnston	Transportation Planner	Provided road data and assisted in the design of the transportation infrastructure.
Craig Kendall	Hydrologist	Provided oversight and expertise to the data collection and performed effects analyses of the Watershed and Fisheries resources.

Betty Kuropat	Silviculturist	Designed and provided oversight for vegetation data collection. Performed analysis for existing condition and effects analysis for vegetation fire severity, vegetation, and bark beetles. Led the development of the Proposed Action and Alternatives. Prepared Mortality Guidelines and contributed to the Snag/Live Tree Prescriptions.
Timothy Light	Archaeologist	Performed effects analysis and data collection for the Heritage and Archeology resources.
Tami MacKenzie	Writer/Editor	Performed writing and editing tasks for the preparation of public documents. Responsible for organization of the project record.
Manuel Mendoza	Assistant Fire Management Officer-Operations	Performed effects analysis to ensure compliance with National Ambient Air Quality Standards.
Marsha Moore	Planning Forester	Contributed to the effects analyses for the Scenery and Economics resources.
Amanda Smiley	Pre-Sale Forester	Provided expertise in logging systems and unit design for alternative development.
Becky Smith	Recreation Resource Manager	Performed effects analysis for the Recreation resource.
Lisa Timchak	District Ranger	Provided oversight, guidance, and direction to the IDT during the scoping, planning, and final documentation phases of the Sheppard Post-Fire Project.
Jamie Tripp	Assistant Fire Management Officer -Fuels	Analyzed data to perform effects analysis for the Fire and Fuels resource.

## Response to Comments

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Public comments express a distinct concept and represent identifiable concerns. Sample statements were selected for each public concern that best represented 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.

### Air Quality

**1. Public Concern: It is fine particulate matter that emits when you burn vegetation that kills fellow citizens in the US.**

*Response:* This project only proposes to burn logging residues that accumulate at salvage harvest unit landings. No broadcast burning of live or dead vegetation expanses of salvage harvest units would occur under any action alternative. The Air Quality and Smoke Management Section of Chapter 3 demonstrates the maximum predicted 24 hour PM<sub>2.5</sub> is approximately 17 µg/m<sup>3</sup> for the 24-hour average, well below the 35 µg/m<sup>3</sup> EPA standard.

Managing smoke emissions using the laws and regulations as described under the Regulatory Framework and Consistency heading in the Air Quality and Smoke Management Section of Chapter 3 is required by the Flathead National Forest when burning vegetation. By abiding by these laws and regulations that were designed to protect the health of the citizens of the United States, individuals would be minimally impacted by our actions. Those citizens concerned about their health related to our prescribed fire programs are being notified through media outlets (see the response to Public Concern #2 below).

**2. Public Concern: We recommend that if there is potential for smoke to drift into populated areas there should be public notification prior to burns. We suggest that notices be placed in the local newspaper at the beginning of each burn season, and additional efforts be made to contact any residents new burns by telephone to make them aware of burns and potential air quality impacts.**

*Response:* All prescribed fire actions must be developed from resource/fire management objectives carried forward from Fire Management Plans and Land/Resource Management Plans. A specific implementation plan for each prescribed fire must be completed, reviewed, and approved before ignition can begin. Within the current Flathead National Forest Prescribed Fire Plan, Element 9, section D are pre-burn notifications that are required and/or suggested by the District Fire Management Officer, Kalispell Interagency Dispatch Center, Forest Public Affairs Officer, and the project Burn Boss. A written narrative for the information plan is also found in this section along with an information summary that the Public Affairs Officer then shares prior to implementation with identified newspapers, TV stations, and interested parties.

**3. Public Concern: There is some concern about air quality and how it will be affected by slash disposal. If pricing of the non-merchantable material is kept at \$0 this will be an incentive to remove this material for pulp or bio-mass. When this happens there will be very little to burn. Also having good clean landing piles, burning during November 15 to December 1, and burning when there is a NE wind will greatly reduce air quality problems.**

**Response:** The pricing of non-merchantable material is addressed in Public Concern #10 below.

Piles constructed with dozers are no longer acceptable due to the amount of dirt that gets mixed in with debris. Piles now are required to be built with an excavator or similar machine. Over the last few years we have seen an increase of leveling cab feller-bunchers with fabricated grapples or buckets with thumb. This equipment has been able to operate on much steeper ground and with much better results thus reducing broadcast burned acres. Piled slash generally burns more efficiently than broadcast burned slash as a result, less particulate matter is released.

Generally, the Forest Service only burns landing piles during open burning seasons which run from October 1<sup>st</sup> to December 1<sup>st</sup> every year. Although meteorological conditions vary greatly during this time, dispersion is usually better in the beginning of this timeframe as daytime temperatures are warmer leading to more convection. During the end of open burning season and into winter, more stable atmospheric conditions prevail as cooler air pools in the valley bottoms. Solar heating is not enough to heat this pooled air, so the stable conditions remain, reducing dispersion until a frontal passage “scours” out the valley air. While the Forest Service considers many aspects before burning, it is part of the Montana and Idaho Smoke Management Group which assures cumulative actions do not result in unacceptable effects on air quality in Montana and Idaho. By participating in the Montana and Idaho Interstate Airshed Group, complying with the Memorandum of Agreement with the Montana Air Quality Bureau, and meeting the requirements of the State Implementation Plan and the Smoke Management Plan, the proposed activities comply with the Forest Plan and the Clean Air Act.

## **Cumulative Effects**

**4. Public Concern: Given the extent of historical and currently proposed logging in the Brush Creek Fire area and the cumulative impacts of these activities, both on the Flathead National Forest (FNF) and the neighboring Kootenai National Forest, a detailed cumulative impacts analysis of all the foreseeable activities on lands of all ownership, including hazard tree removal, BMP upgrades, etc. should be conducted. Cumulative effects analysis of currently proposed post-fire logging projects, including especially, the logging on Plum Creek, the Kootenai National Forest’s Brush Creek Fire Salvage project, the Good Creek logging proposal on the FNF, and nearby state land as well as the Sheppard Creek Post Fire Project should be included in cumulative effects analysis. Cumulative effects analysis should not consist solely of a listing of past, present and reasonable foreseeable activities, but should rather seek to assess the current condition of forest resources, cumulative impact of all past activities on this condition and future trajectory of Forest resources including biodiversity, water quality, soil productivity, and TES species in light of the present proposal and all other foreseeable actions.**

**Response:** A comprehensive cumulative effects analysis has been conducted for this project. The introduction to Chapter 3 of this Final EIS contains an extensive display of past, present, and reasonably foreseeable activities on all ownerships in and near the Sheppard Creek Post-Fire Project area. This table not only lists the activity, but describes in detail when the activity had or will take place and the extent of the activity.

Each resource specialist was provided a cumulative effects worksheet that allows the specialist to articulate the spatial and temporal bounds of their cumulative effects analysis and to determine if the activity had or will have a cumulative effect on their resource. If the activity had no effect, the specialist describes why on the worksheet. If there is or will be an effect, the

specialist addresses the cumulative effect or effects in their Chapter 3 resource section under the Environmental Consequences heading.

The cumulative effects worksheets are located in the project file as individual reports in Exhibits F through T.

## **Economics**

### **5. Public Concern: in deciding which trees to remove and leave, harvest areas, logging systems, and restoration work it is very important that the end result is economical.**

*Response:* The purpose and need of the project is to recover merchantable wood fiber in a timely manner. Each individual salvage unit has been evaluated for the economical feasibility applicable to the assigned logging system. If an action alternative is selected in the Record of Decision, timber sales resulting from that decision would be designed to sell under current market conditions. Please see the economics section in Chapter 3 of this FEIS for a more detailed discussion.

### **6. Public Concern: The FS insists that the economic system as it presently exists be a part of the equation for performing “ecosystem management.” Although we disagree the way this is interpreted to mean that present economic interests must be served first, the FS should follow through and tell the full economic story of just what the project’s impacts would be to taxpayers, not just to local economic interests. Along with the costs of the specific project actions, the costs of road maintenance proportionately attributable to this project and the cumulative economic impacts of carrying out fire suppression policy and the resultant need to carry out such projects as this one should be disclosed.**

*Response:* The costs of specific project actions, including the costs of road maintenance attributable to this project, are included in the economic analysis spreadsheets in Exhibit N-11.

Reporting the cumulative economic impacts of carrying out fire suppression policy is beyond the scope of the purpose and need of this project. Please see the response to Public Comments #9 and #11 below.

### **7. Public Concern: An overlay of pre-fire size class (diameter) and volume class with proposed harvest units for each alternative would be a big help in evaluating how each alternative responds to the purpose and need. Inventory information for burned stands would be most useful to the public and the ID Team if it were compiled into diameter classes for each volume class of the portion likely provide sawtimber and volume of ton-wood. Ton wood from trees and portions of trees that are not useable for sawlogs may have commercial value in some stands. The absence of such basic stand information in the DEIS indicates the Flathead National Forest did not consider potential site-specific stand by stand economic values in designing the proposed action and alternatives.**

*Response:* Please see the response to Public Concerns #10 and #11 below.

### **8. Public Concern: In the name of increased responsibility to the taxpayer for providing the highest benefits in return for public investments, we request that you document how your decisions and the selected alternatives maximize net public benefit. In other words, you should give consideration to, and adequately document, who would benefit from this project and who**

**would pay for it. Please provide an itemized list of monetary costs and benefits for the project, including the no-action alternative.**

*Response:* The Socio-Economics section of Chapter 3 in this FEIS adequately describes the direct and indirect beneficiaries of this project. The cost of the project is also described in this section as the income derived from the sale of the salvageable wood products. The itemized list of monetary costs and benefits by alternative is provided at Project File Exhibits N-10, N-11, and N-12.

**9. Public Concern: The DEIS has practically no meaningful response to our belief that too much commercially valuable wood fiber is being left to rot and fall down with resulting public costs that will vastly exceed any speculative benefit to wildlife or any other resource. It is apparent there is a bias when the amount of wood fiber salvage and economic benefits were not even identified as an issue in the DEIS.**

*Response:* The amount of wood fiber salvage and economic benefit was not identified as an issue in the DEIS as this is the sole purpose and need of the project. Please see the response to Public Concern #11 below regarding the concern that not enough commercially valuable wood fiber is being salvaged.

Project-level economic analysis does not require that non-commodity economic values be addressed. “Weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations” (40 CFR 1502.23). The NEPA process shall be used “...to emphasize real environmental issues and alternatives” [40 CFR 1500.2(b)]. The primary focus at the project level is to identify economic implications that are unique to the decisions made at this management level, as was done in the Economics section in Chapter 3 of the FEIS.

**10. Public Concern: We could find no consideration of salvaging small diameter stands for bio-fuels or any other economic uses other than sawmill logs. Why were trees less than 9” DBH excluded from volume estimates disclosed in the DEIS? Apparently the Flathead National Forest believes these trees have no economic value.**

*Response:* For the purposes of the economic analysis of this project, we displayed that small diameter trees have no economic value. Fire affected, small diameter material typically checks and degrades very quickly and cannot be utilized for most wood products. Yarding and hauling costs for small diameter material are typically too high to compensate for the low value of the product, particularly in steep ground and long haul distances found in the Sheppard Creek Project area. Small diameter material is available for utilization by the timber sale purchaser but we consider it as optional removal. Combinations of lower fuel costs and improved markets for wood products could make small diameter trees more economically attractive.

**11. Public Concern: There appears to be no DEIS response to our scoping request for site-specific economic evaluation data on logging costs and potential timber values by stand type and logging methods. The value information by Alternative in the Economic section (p.3-333) is of no help in evaluating site-specific tradeoffs between stands proposed for treatment and those that are not in each alternative.**

*Response:* A stand by stand, site-specific economic evaluation and documentation of logging costs and potential timber values by stand type and logging methods for every stand in the project area would be an unnecessarily exhaustive and detailed exercise. The output from

such an exercise could potentially be useful and informative; however it would be prohibitively expensive and time-consuming. Utilization of burned material must take place as quickly as possible to realize the greatest value to the American taxpayer and an exercise such as you suggest would cause delay in our analysis and could jeopardize implementation altogether.

The process used by the ID Team to initially select potential salvage units in the Proposed Action was to consider all stands and then eliminate those:

- unaffected by the fire,
- in riparian areas and Riparian Habitat Conservation Areas,
- known to be Forest Plan old growth or recruitment old growth habitat, and
- without enough timber volume to be merchantable considering the harvest method appropriate for the soil type, steepness of slope, and available transportation system.

Information in the District's databases, aerial photo interpretation, and available post-fire silvicultural exams were all used to make the initial determinations for the last of these statements. Many stands with past timber harvest history were eliminated from salvage consideration due to their low numbers of residual or reserve trees. No stands that have been regenerated after timber harvest activities have grown large enough to meet fire salvage merchantability standards. All stands where merchantability was questionable were included in the Proposed Action. A unit by unit, on-the-ground examination was made in the summer of 2008 by experienced foresters and forestry technicians to determine estimated timber volumes and logging costs. Combinations of low stand volumes and high logging costs resulted in many acres being eliminated. This information was used to make the adjustments to the alternative designs as presented in Chapter 2 of this Final EIS.

Units proposed for salvage harvest in one alternative and not proposed in another alternative were not evaluated for their economic tradeoffs because the economic value or cost of an environmental effect, such as sediment production, is difficult and speculative. Project-level economic analysis does not require that non-commodity economic values, such as the benefits of snags and down wood, be addressed.

## **Ecosystem Process and Function**

**12. Public Concern: The rationale and analysis of this proposal must look at the forest as an ecosystem with interrelationships coequal to timber production. Please use the ecosystem management approach to assess fungal and insect organisms as capable of operating in a self-regulatory manner and exist as beneficial organisms within the project area. Some species of trees, native insects, and disease organisms are often described by the FS as "invasive" or somehow bad for the ecosystem. Such contentions that conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters.**

*Response:* The direct, indirect, and cumulative effects of fire and salvage logging on soils, streams, vegetation, wildlife, and fuels are disclosed in the pertinent resource sections of Chapter 3 of the FEIS. All of these resources are discussed relative to ecosystem processes and compared with the effects of Alternative A which proposes taking no management actions.

The term "invasive" is only used in this FEIS to refer to exotic weed species.

**13. Public Concern: the tacit assumption of the FNF seems to be that dead trees have less ecological value than living trees, as dead and dying trees are the focus of harvest activities. Please explain, in detail, an explanation for why this is so and how it relates to the FNF's mandate to maintain biodiversity, aquatic habitat and functionality, and soil productivity.**

*Response:* The ID Team agrees that fire-killed trees have important ecological value to the ecosystem; for this reason the action alternatives require retention of many large snags and downed trees on site after project implementation. As stated in this Final EIS, large snags and downed wood play central roles in diverse ecosystem processes and functions (Rose et al. 2001). Although smaller creatures can use many sizes of dead trees, larger birds and mammals require larger snags, and the larger the snag is, the more species can use it. Large snags remain standing longer, increasing the chance that suitable decay conditions will develop for cavity-using species.

**14. Public Concern: Although our current understanding of the ecological effects of salvage logging is incomplete, what we do know suggests that salvage logging can and often has resulted in significant damage to soils, streams and wildlife by: eliminating or significantly reducing large, dead standing trees critical for many wildlife species; damaging the soil through increased soil erosion and compaction; creating warmer, drier microclimate conditions (thereby increasing fire danger); simplifying forest structure; removing important sources of nutrients and organic material (potentially reducing long-term productivity); and, encouraging the spread of noxious weeds into burned areas. In short, salvage logging reduces important components of the forest ecosystem, and tends to further exacerbate stresses caused by the initial disturbance event.**

*Response:* The effects of fire and salvage logging on soils, streams, vegetation, wildlife, and fuels are disclosed in the pertinent sections of Chapter 3 of this FEIS. Direct, indirect, and cumulative effects are analyzed in separate sections devoted to those resources. Many of these concerns are addressed in Exhibit U-7, the ID Team's response to recommendations made in the Beschta et al. 1995 and Beschta et al. 2004 reports.

### **Emergency Stay of Appeals**

**15. Public Concern: I would encourage you to use the “emergency situation” in your final decision. Because of the species of trees burned value recovery can only occur in the first year or 18 months after the burn. Our local economy needs this volume of logs for use in our sawmills and to provide employment.**

*Response:* The use of an Emergency Situation Determination was approved by the Chief of the Forest Service on August 21, 2008 (see Exhibit U-8).

### **Fire and Fuels**

**16. Public Concern: In your final EIS I think you should address [the “positive effects that regenerated clearcuts have in reducing fire severity”] in more detail. In the scoping letter sent out in 2007, there was a table that compared “percent of burn severity for areas with past timber harvesting VS. “Areas without past harvesting. That disappeared from the DEIS except hidden in back with soil erosion. Are you embarrassed by the fact that clearcuts don't burn? Why do you hide it from the public? I would like to see the USFS get some “data” out there researching the “phenomenon” that clearcuts don't like to burn. One sentence stands out. Burn**

**severity has to do with climate, moisture, slope, wind speed etc. etc. but absolutely no mention about “fuels” or “lack thereof” in harvested units.**

*Response:* A description of the affected environment for past harvest areas and an analysis of the severity and intensity at which these areas burned was not addressed in the Fire and Fuels section of Chapter 3 as this section addressed the effects of the alternatives. No proposed activities in relation to Fire and Fuels are proposed in past harvest areas. However, a general description of fuel loading and its effects on fire intensity and severity based on size class are discussed in both the Fire and Fuels section, as well as in the Snags and Downed Wood section (see pages 3-109 and 3-213, and Tables 3-10 and 3-68). In addition to the Soils Resource section of Chapter 3, burn severity in past harvest areas was discussed in most of the Wildlife resource sections as these areas provided unburned early-seral habitat.

**17. Public Concern: DEIS has no analysis of tree planting impacts on future wildfire behavior (i.e. severity, extent, intensity). Likewise, although the DEIS submits that there is great long term benefit to salvage logging because it removes large standing dead trees which would eventually fall and contribute to ground fuels it does not adequately document and disclose the affects of logging slash on short and mid term wildfire behavior. The DEIS is filled with statements that make no distinction between the reduction of available fuel loads (i.e. organic material which is most likely to fuel a wildfire) and reduction of biomass (i.e. all organic material, irrespective of its possible/likely contribution to wildfire behavior).**

*Response:* A more thorough discussion of tree planting and future wildfire behavior is presented in the Fire and Fuels section of the FEIS on page 3-114. Fire tolerant species are generally used when planting is the desired method for stand regeneration after a disturbance. These species include western larch, ponderosa pine, and Douglas-fir. Tree morphology makes these trees more tolerant to fire. Many other critical factors that affect fire behavior should be considered; such as tree spacing, age of the stand, vigor, insects and disease, slope, and aspect.

A discussion of effects of fuel loading on fire severity and intensity can be found on pages 3-109 through 111 in the Sheppard Creek Final EIS. Please see the response to Public Concern # 19 below.

The environmental consequences of the reduction of biomass through the proposed salvage logging operations is discussed in the Soils and Snags and Downed Wood sections of Chapter 3 of the Final EIS.

**18. Public Concern: The EIS should therefore include an analysis of the FNF’s tacit but historically consistent policy of suppressing wildfires, especially smaller fires that occur under non-severe weather conditions, and subsequently logging substantial portions of the post fire, early seral habitat created following the large fires that escape control. What impacts does such a policy foster with respect to species diversity in aquatic and terrestrial environments and the biotic and abiotic (i.e. soil, future disturbance, etc.) processes which maintain ecosystemic functions and the characteristics that they depend on?**

*Response:* Defining policy is a function of the forest, regional, and national planning processes and outside the scope of project planning, for the Sheppard Creek Post-Fire Project.

**19. Public Concern: Nor does the DEIS disclose the speculative nature of their hypotheses that post fire logging, which removes larger fuels and generally leads to higher surface fuel loads in the near to mid term, can significantly reduce the likelihood of occurrence or subsequent severity of a reburn event.**

**Response:** As stated in the Final EIS (page 3-111), an indirect effect of salvaging fire-killed trees is a potential reduction in the amount of dead vegetation that will eventually fall to the ground and accumulate over time. There is abundant scientific evidence cited in Chapter 3 that increased fuel loads can result in increased fire intensity and severity. In other words, given the same weather and topographic conditions, areas with higher fuel loads will release more energy (burn hotter), exhibit longer flame lengths, have greater potential to convert to crown fires, be more difficult to contain, pose greater risks to firefighters, kill more vegetation, and damage soils more severely than areas with lower fuel loads.

Fuel loads in the burned area will increase over time as the trees killed directly or indirectly by fire begin to fall down, duff and litter layers rebuild, and vegetation and ladder fuels begin to occupy the understory again. According to Brown et al. (2003), in 10 to 30 years after the fire, downed coarse woody debris (CWD) will have started to accumulate from snags falling to the ground. The CWD will start to exhibit some decay, making it more available to burn. The duff layer will not have had enough time to be well established which will not cause detrimental soil heating in the event of another wildfire during this time frame. The risk of a fire burning with high severity would be mostly limited to areas with concentrated CWD or areas that did not burn or lightly burned during the Brush Creek Fire. During this time frame, conifer regeneration will start to establish and onsite herbs and shrubs will dominate the burned area except where the fire burned at such severity it caused deep soil heating. In 30 to 60 years post-fire most of the fire-killed (dead and dying) trees will have fallen to the forest floor and started to exhibit considerable decay. The litter and duff layers will have had enough time to be well established on most sites depending on the density of the overstory conifers. High severity fires will be possible where live and dead fuels are concentrated. In most areas, the overstory trees will have started to fully occupy the site again allowing for crown fires to occur.

The literature is generally lacking in regards to future reburn potential. A recent publication by Thompson et al. (2007) that investigated the Silver and Biscuit Fires in southwest Oregon supports your contention that post-fire salvage areas would reburn more severely. However, it is not disclosed in the publication how fine fuels associated with logging were treated, if at all. The harvest systems employed by contractors in northwest Montana typically involve whole tree yarding that contributes fine fuels to the log landing. Landing piles would be subsequently burned.

By proposing salvage logging in these units, the indirect effect is a reduction of future fuel loads in the proposed units. Because the proposed units represent a small portion of the fire area, and they are not strategically located, they will not have a substantial impact on the movement of future large-scale fires. They will likely play a future role in reducing fire intensity and severity in the immediate vicinity of the treated stand. The treatments would have little to no effect on the existing condition class of the project area.

**20. Public Concern: I'd also like to see a table that compares burn severity in the clearcuts as it relates to the different species and age classes. Do 10 year old lodgepole pine clearcuts burn easier than 30. I noticed in comparing your severity maps that there is a stunning correlation between 5"-9" inch regeneration and low severity burns. Is it easier for young Douglas fir to burn that young lodgepole?**

**Response:** Please see the response to Public Concern #16 above. Correlating size class and species to fire severity and intensity is not necessary to support the purpose and need of this project. However, some discussions about size class and fire severity are included in this Final EIS (see pages 3-20 and 110, and Table 3-10).

It is difficult to generalize if fire behavior in one age or species group would be different than another age or species group. “All other things being equal” is not a real world situation found in forested ecosystems as there are a large number of variables involved in fire behavior. However, different age groups and different species would have different fire behavior if other variables are held constant. A factor that differs by age and species that influences fire behavior is the amount of canopy fuel. Stands with higher amounts of canopy fuel would burn easier and more severely than those with less. Information presented by Scott and Reinhardt (2005) in RMRS-GTR-145 “Stereo Photo Guide for Estimating Canopy Fuel Characteristics in Conifer Stands” show a single Douglas-fir tree has a greater canopy fuel load than a similar sized lodgepole pine. Intuitively, a 30 year old stand of lodgepole pine would have a higher canopy fuel load than a younger stand when the number of trees per acre was the same.

## **Fisheries**

### **21. Public Concern: The FEIS should also show how INFISH riparian management objectives can be met with proposed riparian harvests.**

**Response:** Alternative D proposes harvest in RHCAs and portions of these RHCAs near streams contain riparian ecosystems. The FEIS describes how Alternative D would affect Riparian Management Objectives (RMOs), particularly large woody material. Exhibit F-2 summarizes habitat data at three sites in Sheppard Creek prior to the Brush Creek Fire. This document compares existing woody material, pool frequency, bank stability, and residual pool depth to INFISH RMOs and reference values.

### **22. Public Concern: Native fish and their habitat have also been degraded by decades of past logging and road building. The streams in the project area are deficient in pool habitat, have high sediment levels, and are in need of restoration, not another damaging project.**

**Response:** The FEIS acknowledges past management effects on fisheries in the Affected Environment section. However, lack of data prior to management activities makes it difficult to determine with a high degree of certainty how past management has affected aquatic habitat. Proposed management activities are discussed in light of past, present, and future activities under Cumulative Effects. The project includes several activities that are expected to improve fisheries habitat, such as culvert upgrades and road BMPs. These activities would help offset potential impacts. Predicted management impacts and compensatory activities vary by alternative and are discussed in detail in the FEIS.

### **23. Public Concern: Alternative D cannot be selected because it does not comply with INFISH and will retard attainment of Riparian Management Objectives. We believe that the other action alternatives will also retard attainment of RMOs because they will have negative impacts on streams that are already degraded or impaired.**

**Response:** As stated under the Regulatory Consistency heading of the Fisheries section of Chapter 3, the action alternatives all comply with INFISH and the Flathead Forest Plan. Please see the response to Public Concern #21.

**24. Public Concern: 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.**

*Response:* A discussion of recent monitoring from other projects regarding fish habitat is located in the Affected Environment portions of the Fisheries and Hydrology sections of Chapter 3. Please also see the response to Public Concern #36 below.

**25. Public Concern: There is a note at the bottom of page 3-166 that mentions proposed harvest within RHCAs, and it is stated in Features Common to All Alternatives that “standing and downed trees within 75 feet of wetlands (not streams) would not be removed for bark beetle concerns or other reasons” (page 2-8), rather than just referring to the INFISH RHCA buffers. This leaves the reader with some confusion regarding the extent of no harvest RHCA buffer protection and buffer widths that would be applied within the project area under all alternatives... It would be helpful to public understanding to more clearly describe the specific INFISH and RHCA buffer protections and buffer widths and “special treatment zones” that are proposed for perennial and intermittent streams and wetlands for all action alternatives.**

*Response:* RHCAs are zones where fish habitat receives primary consideration in project planning. Habitat attributes such as pool frequency, large woody material, and stream temperature are important considerations when managing RHCAs. Wetlands, as referred to in the DEIS and FEIS, are generally within or adjacent to RHCAs. Sometimes, very small wetlands are found in upland areas far away from streams. The 75 foot buffer associated with wetlands is primarily designed to protect important terrestrial and aquatic wildlife species, particularly amphibians.

## **Insects and Disease**

**26. Public Concern: These proposed [riparian] harvests are not going to have any significant effect on the reduction of bark beetles because of the ability of bark beetles to come in from other untreated areas. In fact, reduction of woodpecker habitat may increase the bark beetle threat because of reduced predation by woodpeckers.**

*Response:* Approximately 500 acres are proposed in Alternative D in and near riparian areas in stands that are susceptible to spruce and/or Douglas-fir beetles. In these units, only spruce and Douglas-fir trees would be removed. In most stands these trees comprise less than 50 percent of the trees, leaving adequate habitat for cavity nesting birds and other species of insects, such as wood boring beetles. Based on the background provided in the Bark Beetle section of Chapter 3, a single large tree can “produce about 7500 beetles, assuming a five percent brood survival rate. Generally, at high population levels, one infested tree can produce enough beetles to kill an additional five trees” (Gibson 2004, personal communication). Therefore, removing these infested and susceptible trees would contribute to reducing a bark beetle population buildup.

**27. Public Concern: We recommend that there be ongoing beetle monitoring to confirm beetle presence and tree mortality and the risk of beetle epidemics before any beetle treatments are finalized.**

*Response:* Field surveys and reconnaissance within the fire area, including field visits by a Forest Service entomologist, were conducted throughout the spring and summer of 2008, and monitoring of beetle activity was one objective of these surveys. Information from this moni-

toring has been incorporated into the Bark Beetle section in the FEIS, and will be considered by the deciding official in the determination of the final decision.

**28. Public Concern: Include the beetle salvage components of Alternative D where potential beetle activity units are analyzed for, but harvest would not take place until beetle activity is confirmed.**

*Response:* See response to #27. Beetle activity has and will continue to be monitored in the fire area, and the project decision will incorporate the most up-to-date information on beetle activity that is available.

**29. Public Concern: While we do not oppose management to address bark beetle outbreaks for silvicultural purposes, we think it is important that the public understand that bark beetle outbreaks are a normal component of forest ecosystem.**

*Response:* The Bark Beetle section in Chapter 3 of the EIS states this point several times, noting that bark beetle activity in forests is a normal and natural part of the ecosystem, and beetle outbreaks after fire are not at all uncommon. However, it is also clear that high tree mortality conflicts with Forest Plan management objectives for much of the Brush Fire area. Forest Plan direction, as well as the social, economic, and ecological conditions of the project area were considered by the Forest Supervisor in determining the purpose and need for management action (refer to Chapter 1 of the FEIS, under the discussion of Purpose and Need).

**30. Public Concern: Alternatives only propose harvest of 19-40 percent of the 14,600 acres in the project area that is susceptible to beetle outbreak (DEIS, p.3-51). Stands with diameters large enough to be biologically susceptible to beetle attack are usually commercial size timber. Leaving thousands of acres of these stands that pose a serious threat of economic and environmental costs to nearby private timber as well as Federal. Beetle susceptible stands should be the highest priority for salvage.**

*Response:* The existing condition and effects analysis in the FEIS has been updated to reflect the latest information from monitoring of beetle activity and ground-truthing of stand risk. Please refer to FEIS Chapter 3 under the Bark Beetle section for updated values associated with harvest in beetle susceptible areas. Results of the ground-truthing also led to dropping several units from the DEIS that have low volume, were burnt beyond recoverable value, or had trees that are likely to survive. A management plan has been developed to protect some of these from Douglas-fir beetles with MCH pheromones and funnel traps. Though Alternative B, the Proposed Action, does treat many of the stands that are susceptible to bark beetle infestation, Alternative D was specifically developed to respond directly to concerns similar to yours - that the proposal does not harvest enough susceptible Douglas-fir and spruce trees to protect against loss of trees on adjacent National Forest and private lands. Additional areas of burned forest at risk of beetle infestation, especially spruce beetle, were added into this alternative, treating about 30 percent of the of burned forest susceptible to spruce (6800 acres) or Douglas-fir beetle (14,000 acres) infestation (refer to Bark Beetle section in Chapter 3 of the FEIS).

**31. Public Concern: The FS often makes a case for logging as a way to reduce insect and disease damage to timber stands. As far as we are aware, the FS has no empirical evidence to indicate its “treatments” for “forest health” decrease, rather than increase, the incidence of insects and diseases in the forest. Since the FS doesn’t cite research that proves otherwise in its NEPA analyses, we can only conclude that “forest health” discussions are unscientific and biased toward**

**logging as a “solution.” Please consider the large body of research that indicates logging, roads, and other human caused disturbance promote the spread of tree diseases and insect infestation.**

*Response:* Most of the research and literature we found indicates that appropriate vegetation management that reduces competition, increases vigor, and promotes resistant species can reduce the susceptibility of stands to insects and diseases. In addition, most of the research and literature we found related to bark beetles after a disturbance, such as fire, indicates that population control is possible if implement before or early in an outbreak. Please refer to the literature that was cited in the Bark Beetles section of Chapter 3 of this FEIS for examples. Once beetle populations increase to epidemic levels, timber harvest is not as effective for control, partly because it is difficult to predict where and how quickly the beetles will spread.

**32. Public Concern: Enumeration of and monitoring of specific small, non-game birds and animal populations that are important in keeping destructive insect populations at low levels must also be disclosed.**

*Response:* Several Project Record Exhibits including Q-6, Rb-2, Rd-11, Rn-4, Rr-4, Rs-5, and Rt-7 provide information on wildlife monitoring and observation records.

The Bark Beetle analysis in Chapter 3 of the FEIS recognizes that beetles have numerous natural enemies, including birds, insect predators, and parasites. These organisms can have an impact on beetle populations and brood success when beetles are at lower population levels. They certainly contribute to the reduction in beetle populations during outbreak conditions, but their effect is much reduced, simply due to the large number of beetles that exist. Removal of trees infested with or at high risk to beetle attack is the tool we are proposing to use to reduce beetle populations. We also plan to use dispersing pheromones and funnel traps in selected areas where harvesting susceptible trees is not feasible or desirable. Removing trees in only about 30 percent of the susceptible stands means we will depend on birds and other predators to help manage beetle populations in the other 70 percent of susceptible stands. Monitoring activities will be focused on the effects of the timber harvest and other beetle management actions.

**33. Public Concern: Only one alternative proposed any increase at all in harvest from the proposed action and we discover (p.3-33) that the paltry 10,000 CCF increase proposed in Alternative D over Alt. B would actually be harvested “...only if increased bark beetle populations are detected.” What does that mean, no increase from the current unacceptably high levels of bark beetle attacks on the Tally Lake Ranger District? If there was any serious attempt to meet the purpose and need for this project all alternatives should have a condition for increasing the harvest areas if increased bark beetle populations are detected outside harvest units.**

*Response:* As explained in Chapter 1 of the FEIS, the “Proposed Action” is defined early in the project-level planning process. It serves as a starting point for the interdisciplinary team of Forest Service resource specialists and gives the public and other agencies specific information on which to focus comments. Using these comments and information from preliminary analysis, the ID Team then develops alternatives to the Proposed Action. The Sheppard Creek Project Proposed Action (Alternative B) is designed to meet the purpose and need of recovering wood fiber in a timely manner. Areas selected for salvage harvest were guided specifically by this purpose and need and by the dominant Forest Plan management objective across the project area of emphasizing the cost efficient production of timber while protecting the productivity of the land and timber resource (refer to FEIS Chapter 1). Your concern about adequate response to the risk of bark beetle infestation was raised during the scoping stage, and Alternative D was specifically developed to respond to these concerns. Though many of

the units in the proposed action also fell within stands of higher bark beetle susceptibility, Alternative D added as much additional bark beetle susceptible stands as possible, considering such factors as economic feasibility of harvest, access, degree of bark beetle risk, and other resource concerns. The responsible official may combine parts of any or all alternatives in reaching a final decision on where to salvage harvest.

## **Logging Systems**

**34. Public Concern: Allow flexibility in logging systems. If soil and weather conditions permit, allow more ground based systems.**

*Response:* The prescription of a particular logging system was made based on many site-specific factors. The least expensive logging system was typically selected when all other resource-related concerns were met, such as the need to protect soils on steep slopes or to reduce the amount of noxious weed spread.

**35. Public Concern: Too much area is targeted for helicopter logging. No alternative appears to respond to this concern while making an effort to respond to the purpose and need even though it was identified as an issue.**

*Response:* Alternative C specifically responds to the issue of too much helicopter logging by prescribing no helicopter yarding. Helicopter yarding was only selected in Alternatives B and D when no other system was available without the construction of large amounts of new roads.

## **Monitoring**

**36. Public Concern: for every project proposal, it is important that the results of past monitoring be incorporated into planning. 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 have been previously committed to. For that reason, we expect that the following be included in the NEPA documents or project files:**

- A list of all past projects (completed or ongoing) implemented in the proposed project area watersheds.
- The results of all monitoring done in the project area as committed to in the NEPA documents of those past projects.
- The results of all monitoring done in the proposed project area as a part of the Forest Plan monitoring and evaluation effort.
- A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.

*Response:* An effort was made at the beginning of the project to locate planning documents and monitoring reports from past vegetation management projects in the vicinity of the project area and for other salvage projects on the Flathead National Forest. The most pertinent past planning projects the ID Team consulted are listed here:

- Little Wolf Fire (1995)
- Sheppard Griffin (1996)
- Spruce Beetle Control Project (1996)
- Good Creek Resource Management Project (2000)

- Tepee Salvage Project (2001)
- Moose Post-Fire Project (2002)
- Robert-Wedge Post-Fire Project (2004)
- Westside Reservoir Post-Fire Project (2005)

Table 3-3 in this FEIS lists the names of the timber sales, the year the sale was most active, and the acres of timber harvest in the project area.

Exhibit U contains copies of monitoring reports created as a result of monitoring plans outlined in the above listed projects. These reports were made available to the ID Team for use while designing the proposed action and conducting resource analysis of the alternatives.

Forest Plan monitoring requirements are organized as 63 distinct items. Each item, such as recreation use (Item #1) or cultural resource protection (Item #2), are reported as forest-level statistics. Individual data for these statistics may have been collected from activities in the Sheppard Creek project area, but were not reported at the project level. Any monitoring data collected from the project area from individual project monitoring plans and then used in Forest Plan monitoring reports are shown in Exhibit U.

Monitoring plans located in Exhibit U for past project NEPA documents in the project area include the following projects: Little Wolf Fire, Sheppard Griffin, Spruce Beetle Control Project, Good Creek Resource Management Project, and Tepee Salvage Project. All of the monitoring for these projects has been completed with the exception of timber sale related activities in the Good Creek area, such as timber harvest monitoring, reforestation monitoring, Best Management Practices monitoring, and post-harvest surveys. These monitoring activities will be completed as the timber sale harvests are completed.

## **Old Growth**

**37. Public Concern:...an attribute of Alternative C is that it proposes no salvage harvest in old growth or possible recruitment old growth (page 2-18), which implies that the other action alternatives propose some salvage harvest in old growth or possible recruitment old growth. We recommend that the extent of proposed salvage in old growth or possible recruitment old growth or areas of old growth uncertainty be clarified for all alternatives in the FEIS.**

**Response:** The acreage of proposed salvage in known or possible old growth and recruitment old growth habitats was provided for each alternative in Table 3-67 of the DEIS and in text on pages 3-229 through 3-231. Additional field surveys between the time the DEIS was published and the preparation of this FEIS resolved all areas of uncertainty about old growth and recruitment old growth in proposed units. As described on pages 2-3 and 2-4 of the DEIS and FEIS, no old growth or recruitment old growth would be salvage harvest treated in the subsequent timber sales, so all areas where field surveys in 2008 determined them to actually be old growth or recruitment old growth were dropped from further consideration between the time the DEIS was published and the preparation of this FEIS. For maps and more detailed information, see Exhibit Q-7 (Effects on Old Growth Habitat and Recruitment Old Growth).

**38. Public Concern: the DEIS, however, appears to include some inconsistent statements in regard to old growth harvest. For example, it is stated at the bottom of the last full paragraph on page 3-229 that “no salvage would occur in areas found during 2008 surveys to be old growth or recruitment old growth, or where this is still uncertain at the time of unit layout or where this is uncertain would not be harvest.” Yet in the first paragraph on that page it is stated that,**

**“considerable amount of salvage would occur in areas where old growth values are currently uncertain, and this is particularly true in Alternative D.”**

*Response:* Alternatives B and D included areas where the conditions were not known at the time of the DEIS. Please also see the response to Public Concern #37 above.

**39. Public Concern: Although pg 3-235 says all alternatives would be consistent with Amendment 21, nowhere does it provide the numbers to show how each alternative compares with the Amendment 21 goal to “maintain and recruit old growth forests...within the 75% range around the median of the historical range of variability.**

*Response:* The Sheppard Creek Post-Fire Project would *maintain* old growth forests by not salvage harvesting any old growth and by reducing the probability that old growth in and near the fire area would be affected by high populations of bark beetles. Similarly, the project would *recruit* old growth by not salvage harvesting any recruitment old growth habitat and by attempting to reduce bark beetle populations. Detailed information about how the project compares with the Amendment 21 goal to “maintain and recruit old growth forests to an amount and distribution that is within the 75 percent range around the median of the historical range of variability” is found in Exhibit Q-9 (Reference conditions for Old Growth Habitat and Other Mature Stands). As discussed in the exhibit, the methodology for assessing historic patterns that was used for Flathead National Forest Amendment 21 appears to be the most relevant and accurate for the Sheppard Creek Project’s Old Growth Analysis Area. Across the Stillwater Sub-basin (see map in Exhibit Q-9), the 75 percent range around the median of the historical range of variability of late seral forests for the Montane terrestrial community group was approximately 17 to 25 percent. Across the 76,094-acre Old Growth Analysis Area for the Sheppard Creek Post-fire Project, the current amount is 21 percent. This amount is also within the 0 to 23 percent range estimated by the Interior Columbia Basin Ecosystem Management Project (ICBEMP) for Ecological Sub-region 19. See also Exhibit Q-10 (Consistency with Flathead National Forest LRMP old growth direction).

**40. Public Concern: The DEIS does not adequately discuss the approach and reasoning used to identify “dying” trees and treat them as dead trees. The FNF has not fully disclosed the assumptions that underlie these criteria, their reliability and/or error, and a detailed explanation of any site specific field data from other areas of the FNF that have previously burned, especially where “dying” criteria were used (e.g. Westside Reservoir fires, Robert, Wedge or Moose fires, or Crazy Horse III just as a few examples). What has been learned from these fires and post-fire logging projects about the validity of these criteria or their associated error?**

*Response:* A brief explanation and table showing the mortality guidelines used for the Sheppard Creek Project have been added to the “Features Common to All Action Alternatives,” “Retention of Live Trees” section in Chapter 2 of the FEIS. A detailed description of the process, literature, and monitoring results from other fires that was used to derive these guidelines is in Project File Exhibit P-15. For Douglas-fir, the 2007 research results by Hood et al. were used extensively for mortality guidelines. This research included estimates for the interaction of fire mortality and damage with Douglas-fir bark beetle attack probability. For other species, a combination of research, and monitoring results and observations from past fires were used. The DEIS and preliminary mortality guidelines were prepared immediately post-fire when damage to the trees was not obvious enough to predict mortality. All the research on post-fire tree mortality that we found began following trees one year after the fire. Field observations in late summer of 2008 in the Brush Creek fire can begin to compare with the various research. The mortality guides are designed based on predicting a probably of mortality over a period of five years.

**41. Public Concern: How many acres of forest that were designated as old growth before the fire and were subsequently burned by high severity fire are slated for logging under each alternative? We request that the FNF divulge how many acres of pre-fire old growth that burned at high severity will be logged under each alternative. How much pre-fire mature forest will be harvested? If a table like Table 3-15b on p. 3-36 of the DEIS were provided that showed proposed logging for each alternative for pre-fire instead of post-fire structural stage, this would help provide clarification. We request that such a table be included in the FEIS.**

*Response:* This information was provided in the DEIS, in the first row of Table 3-67 on page 3-229. It is also in the FEIS to describe the changed alternatives and updated old growth situation on page 3-235. Briefly, the alternatives would salvage harvest from 825 to 1400 acres of burned-up (former) old growth lost due to the Brush Creek Fire.

**42. Public Concern: Alternative B would also construct temp roads along or through existing unburned old growth or recruitment old growth. Such roads would further reduce the effectiveness of old growth or recruitment old growth and should not be allowed.**

*Response:* In the FEIS alternatives, no new temporary roads are proposed to be built through old growth habitat. As disclosed in the FEIS in the Environmental Consequences section for Old Growth Habitat and Old Growth Associated Wildlife Species, four temporary roads in Alternative B could have impacts on old growth or recruitment old growth habitats. Alternative B proposes to construct new temporary roads along the edge of unburned existing old growth habitat and through recruitment old growth. Another temporary road would use an existing template outside the fire area that passes through old growth and what may be recruitment old growth. See Exhibit Q-7 (Effects on Old Growth Habitat and Recruitment Old Growth) for a map of these roads with old growth habitats. Forest Plan Standard H6 states that “road construction associated with vegetation management actions shall avoid or minimize impacts to old growth to the extent feasible.” The final decision for the Sheppard Creek Post-fire Project will be consistent with this standard, as displayed in Exhibit Q-10 (Consistency with Flathead National Forest LRMP old growth direction).

**43. Public Concern: The DEIS discloses that within the fire perimeter nearly all the old growth existing before the fire was lost (table 3-66) and that only about 6% of the Shepard Cr. Drainage remains in old growth. This is a very small amount and should be protected in every way and a large area managed for replacement old growth.**

*Response:* No known or suspected old growth or recruitment old growth habitat would be salvage harvested in any alternative in the FEIS. The 6.5 percent displayed in Table 3-66 of the DEIS was for an area that includes the largely unburned upper Good and lower Griffin drainages, in addition to the Sheppard drainage. This analysis area was shown in Figure 3-20 of the DEIS and Figure 3-21 of the FEIS. New field information gathered between the time the DEIS was published and the preparation of this FEIS revealed that no more than 0.5 percent of the Brush Creek Fire area on the Flathead National Forest is currently in old growth habitat condition. This is 5.9 to 6.0 percent of the larger analysis area. This information is located on page 3-231 of the FEIS.

**44. Public Concern: Please disclose whether the amount of existing old growth meets standards and other required levels for old-growth habitat. The FS must consider the likelihood that the burned areas had old-growth habitat characteristics enhanced, not destroyed by the fire. Please disclose if the proposed cutting units were, still are, or will, in the foreseeable future, qualify as old growth.**

**Response:** Spring and summer 2008 field visits assessed old growth or recruitment old growth status in all proposed salvage units where old growth status was suspected or uncertain at the time of the DEIS. All areas found to be old growth or recruitment old growth were eliminated from all alternatives in the Final EIS, consistent with statements in the DEIS on pages 2-3 through 2-4. As discussed in the Final EIS (pages 3-234 and 3-235), burned up old growth no longer functions as old growth habitat, although there is relatively more pre-fire tree decay in the dead trees and greater habitat complexity. The old growth stage of forest development is temporary, as are other forest stages (Green et al. 1992, updated 2005). In this part of northwest Montana, when fire kills all or most of the large old trees in old growth stands, these areas will not function as old growth habitat for approximately 100 years or more. The most relevant direction in the Forest Plan is Resource Management Goal 10, which states: “Maintain and recruit old growth forests to an amount and distribution that is within the 75% range around the median of the historical range of variability. Where current conditions are below this amount, actively manage to recruit additional old growth.” See Exhibits Q-1 (Old-growth Forest Types of the Northern Region, Green et al. 1992, updated 2005), Q-2 (Changes to Old Growth status, including office and field review process), Q-5 (Existing Condition of Old Growth Habitat and Recruitment Old Growth), Q-9 (Reference conditions for Old Growth Habitat and Other Mature Stands) and Q-10 (Consistency with Flathead National Forest LRMP old growth direction) for details. The final decision for the Sheppard Creek Post-fire Project will be consistent with this goal.

**45. Public Concern: There is considerable discussion about “Old Growth” and how to continue adequate “Old Growth” components for the burn area. By leaving the Western Larch you have retained one component of “Old Growth.” However leaving large Douglas-Fir will only increase mortality from bark beetles both within and outside of the burn area.**

**Response:** Retaining large live or dead trees in burned areas does contribute to long-term old growth habitat, as described in the “Old Growth” and “Snags and Downed Wood” sections in Chapter 3 of the DEIS and FEIS. The impacts of salvage harvest on wildlife species that use snags and downed wood as habitat are disclosed in this FEIS on pages 3-214 through 3-225, with far more detail provided in Exhibit Rd-3 (Snag and downed woody material habitat and effects analysis). These include direct loss to salvage harvest and temporary road construction, and felling for safety concerns. The potential loss of old growth habitat to bark beetle infestations is discussed for each alternative in the “Old Growth” and “Bark Beetles” sections.

**46. Public Concern: Please disclose, using tables and maps, the amounts, locations, sizes, and connectivity of all old-growth stands in the project area. Disclose whether it is actual old growth (meets all criteria) or whether it is “recruitment” old growth. Disclose whether or not you have compared all stands proposed for logging and/or burning to the old-growth criteria. Please disclose the methodology used to identify each stand as old growth, recruitment old growth, or not old growth.**

**Response:** For maps and acreages, see Exhibits Q-1 (Old-growth Forest Types of the Northern Region, Green et al. 1992, updated 2005), Q-2 (Changes to Old Growth status, including office and field review process), Q-5 (Existing Condition of Old Growth Habitat and Recruitment Old Growth), Q-7 (Effects on Old Growth Habitat and Recruitment Old Growth), and Rg-7 (Connectivity within and beyond the Sheppard Salvage Analysis Area).

**47. Public Concern: The fact that the FS has not monitored the population trends of its old growth management indicator species (MIS) as required by the Forest Plan bears important mention here. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out**

**multiple projects simultaneously across the Forest makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992).**

*Response:* Project Record Exhibit Rg-1 (Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities) analyzes the status of old growth-associated wildlife on the Flathead National Forest. Several Project Record Exhibits including Q-6, Rb-2, Rd-11, Rn-4, Rr-4, Rs-5, and Rt-7 provide additional information on wildlife monitoring and observation records. These records were used to establish the reliability of habitat-based status estimates for old growth dependent wildlife populations.

**48. Public Concern: Younger stands with remnant medium and large sized trees would likely not meet Green et al and would not qualify as old growth, however, given their historical abundance they were undoubtedly an integral part of many species' habitat requirements, are likely therefore of crucial importance to maintaining wildlife populations, and yet have significantly declined in abundance largely due to logging. This is a fact which is not accounted for, or acknowledged, by the Forest Service's dependence on the maintenance of a small portion of old growth forest as a proxy for old-growth species viability and ultimately the maintenance of biodiversity that is an FS mandate. How can the FS claim that its strategy for maintaining old growth dependent species viability, or the viability of other species dependent on medium and large trees outside of or in addition to old growth, is therefore valid?**

*Response:* The effect of past timber harvest on old growth habitats is described in the old growth cumulative effects section in the DEIS (pages 3-232 to 3-234) as well as in the old growth affected environment section (DEIS pages 3-224 to 3-228). Project Record Exhibit Rg-1 (Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities) analyzes the status of old growth-associated wildlife on the Flathead National Forest. As described on pages 2-3 and 2-4 of the FEIS, no old growth or recruitment old growth would be salvage harvest treated in the Record of Decision and subsequent timber sales, so all areas where field surveys in 2008 determined them to actually be old growth or recruitment old growth were dropped from further consideration between the time the DEIS was published and the preparation of this FEIS.

**49. Public Concern: There are important implications of these findings from the ICEBMP that we believe the FS must take into account. Hessburg et al (2000) enumerate these implications:... Especially in a mixed severity fire regime as historically existed in the Sheppard Creek project area—where remnant medium and large trees were likely a substantial component of the overall abundance of medium and large trees—this information brings to light the potentially fatal flaws of the FS strategy of managing old growth forest exclusively, without an adequate management strategy for medium and large trees outside of old growth. Medium and large tree structures that historically supported many forest species likely existed outside old growth, but potentially connecting old growth, through a patchwork of younger aged stands. How does the FS's species viability strategy take all of this information from the ICEBMP into account? How does the proposed logging strategy account for medium and large tree requirements outside of old growth by forest species that are currently or were historically found in the area? Information in the DEIS should directly address these questions.**

*Response:* Forest Plan Resource Management Goal 10, states: "Maintain and recruit old growth forests to an amount and distribution that is within the 75% range around the median of the historical range of variability. Where current conditions are below this amount, actively manage to recruit additional old growth." There is also an objective that "sufficient retention of forest structure (large diameter live trees, snags, and coarse woody debris)" should be left to

provide for future wildlife movement through the matrix surrounding old growth forests. At the landscape level, there is a standard to “prescribe landscape treatments that protect old growth forests from disturbances that threaten old growth composition and structure.” Sufficient mid-seral/structural stage stands are to be maintained to allow for recruitment of old growth within the historical range of variability, emphasizing old growth development “in stands that are most likely to persist under native disturbance regimes, and that provide a patch size and pattern most advantageous to old growth associated wildlife species.” The final decision for the Sheppard Creek Post-fire Project will be consistent with this direction. Exhibits Q-9 (Reference conditions for Old Growth Habitat and Other Mature Stands) and Q-10 (Consistency with Flathead National Forest LRMP old growth direction) provide this information. Also, please see the response to Public Concern #39, above.

**50. Public Concern: 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. Please disclose how previous management actions have affected their ecology. This practice seems most specifically designed to allow harvesting of more trees, in particular medium and large sized trees outside of old growth, rather than a practice based on any honest ecological assessment of their value. Please disclose the amounts of snags, recruitment snags, and down woody debris previous logging operations have left in post-fire logged 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 that exist in similarly stocked burned unmanaged areas for comparison.**

*Response:* The valuable ecological role of dead, dying, and downed trees, particularly in the post-fire environment, is discussed on pages 3-207 through 3-209 of the FEIS. Exhibit Rd-10 provides Post-activity monitoring for downed-wood and snags. See also Exhibits Rd-3 (Snag and downed woody material habitat and effects analysis) and Rd-14 (Cumulative Effects Considerations for Snags).

**51. Public Concern: The FNF has failed to cite any evidence that its “managing for old growth habitat” (i.e., logging old growth) strategy will improve old growth species habitat over the short-term or long-term. In regards to Amendment 21’s “managing for old growth habitat” theory:... Furthermore the FNF never discloses if the areas “treated” will retain characteristics meeting Northern Region old growth criteria—and if they won’t, how they will at some specified time in the future. There is no scientific certainty in the FNF’s approach.**

*Response:* This comment is not relevant to the actions proposed in the Sheppard Creek Post-fire Project. As described on pages 2-3 and 2-4 of the FEIS, no old growth or recruitment old growth would be salvage harvest treated in the subsequent timber sales, so all areas where field surveys in 2008 determined them to actually be old growth or recruitment old growth were dropped from further consideration between the time the DEIS was published and the preparation of this FEIS.

**52. Public Concern: How does the FS’s management strategy, represented here by the Sheppard Creek Post-Fire project—which involves the almost exclusive dependence of species viability on strictly defined and static old growth forest proxies, suppression of manageable fires and the inability to suppress large fires, the well documented tendency to follow these fires with harvest of medium and large dying, dead and even some living trees in areas not designated as old growth—account for the substantial evidence of the current lack, but historical importance of medium and large trees both within and outside of old growth, as presented above?**

*Response:* The Forest Plan accounts for the ecological importance of retaining large trees across the landscape through several goals, objectives, and standards included in Amendment

21 to the Forest Plan. The current conditions in terms of live trees were analyzed during the Amendment 21 NEPA process and for project-level NEPA analyses, where appropriate. For the Sheppard Creek Post-Fire Project, this is discussed primarily on pages 3-213 through 3-225 of the FEIS and in Exhibits Rd-2 (Cavity-using species on the Flathead National Forest), Rd-3 (Snag and downed woody material habitat and effects analysis), Rd-4 (Snag and downed wood habitat species biology and management background information), Rd-13 (Deadwood Habitat Prescriptions and Rationale), and Rd-14 (Cumulative Effects Considerations for Snags). See also Exhibit Rg-1 (Flathead National Forest Evaluation & Compliance with NFMA Requirements to Provide for Diversity of Animal Communities).

**53. Public Concern: None of the action alternatives will protect and restore old-growth forest habitat...**

*Response:* The action alternatives are all expected to indirectly reduce the risk of bark beetle infestations killing large spruce and Douglas-fir trees in old growth habitat in and near the Brush Creek Fire area.

**54. Public Concern: The EIS states that the project complies with Amendment 21 to the Forest Plan but provides no analysis. What is the 75% range around the median of historical variability in the project or cumulative effects area? How much old growth does that equate to?**

*Response:* Exhibits Q-9 (Reference conditions for Old Growth Habitat and Other Mature Stands) and Q-10 (Consistency with Flathead National Forest LRMP old growth direction) provide this information.

## **Other**

**55. Public Concern: The “Purpose and Need” still is entirely one-dimensional, namely salvage of timber. Flathead Audubon Society previously commented that the Forest Service has obligations to other resources and they should be reflected in the “Purpose and Need” as well. By confining the “Purpose and Need” to strictly timber salvage it allows the Forest Service to easily select against any alternative or other non-timber resource oriented management because they would not harvest as much timber.**

*Response:* We agree the Forest Service has obligations for the management of all forest resources. These obligations are addressed in the “Issues” section of Chapter 1, “Features Common to all Action Alternatives” section in Chapter 2, the descriptions of the action alternatives in Chapter 2, the discussion of the individual resource areas in Chapter 3, and the supporting documentation in the project file. These obligations and issues designed the alternatives to the proposed action. The responsible official, when deciding on a set of actions in the Record of Decision, will consider the impacts of the proposed activities on all resources. The No Action Alternative, which proposes no timber harvest, will be considered along with the action alternatives.

**56. Public Concern: Please see Ament (1997) as comments on this proposal, in terms of fire policy and Forest Planning.**

*Response:* The article “Fire Policy for the Northern Rocky Mountains (U.S.A.)” by Robert Ament has been reviewed by the District Ranger, the Fire and Fuels Specialist, ID Team Leader, and other ID Team members. This article advocates a change to the prescribed fire and prescribed natural fire policies of government agencies as well as vegetative manipulation

as a means of influencing fire behavior. The Sheppard Creek Project does not propose any prescribed fire, does not change prescribed natural fire policy, and does not have fuel reduction as a purpose and need. This article has little relevance to the current project.

**57. Public Concern: 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. 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. 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:* Considering the conditions of the forest just previous to the fire as a point in a process of forest succession was discussed by several resource specialists to give perspective to the post-fire landscape. An example is the amount and distribution of seeding, sapling, and pole-sized stands presented in the Vegetation section. The succession of both the burned and unburned stands from the point of the fire in 2007 into the future is an important concept most of the resource specialists addressed in their analysis in Chapter 3.

The post-fire state of the forest was assessed in each of the resource sections of Chapter 3 under their heading “Affected Environment.”

**58. Public Concern: We request that you thoroughly disclose and analyze the impacts of wildfire suppression activities on the Forest. What restoration activities have or will be 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 ensure that these fire lines are not used by Off-Road Vehicles (ORVs) or otherwise perpetuated as a source of forest fragmentation? We believe that removing the impacts of fire suppression, rather than logging trees, is a more justified form of restoration work.**

*Response:* Post-fire restoration of suppression activities took place as part of the suppression activities in the fall of 2007. Burned Area Emergency Restoration (BAER) activities were planned in the fall of 2007 with most of this implementation being completed in the summer of 2008. Some BAER activities are on-going. Both of these actions are described in Table 3-1 of this Final EIS and have been considered in the cumulative effects analysis in the individual resource sections of Chapter 3 and the cumulative effects worksheets in the individual resource sections of the project file.

Post-fire restoration of suppression activities and the BAER actions were implemented to fully discourage the use of off-road vehicles on the fire lines. Ditches were reconstructed at the intersection with existing roads and substantial amounts of logs, rocks, and other debris were scattered and placed in the fire lines.

**59. Public Concern: We suggest consideration of an appendix that consolidates responses to the Beschta et. al. post-fire issues.**

*Response:* The interdisciplinary team has prepared a consolidated response to the issues, suggestions, and concerns discussed in the 1995 Beschta et al. report and 2004 Beschta et al. publication. This response is fourteen pages and can be reviewed in the project file (Exhibit U-7).

**60. Public Concern: The description of Alternative C in the DEIS Summary (page S-4) says 6.6 miles of temporary road would be constructed over historic road templates and 2.9 miles of new**

temporary road would be built, whereas the description of Alternative C in Chapter 2 of the DEIS (pages 2-21, 2-22) says the reverse (i.e. 2.9 miles of temporary road would be constructed over historic road templates and 6.6 miles of new temporary road would be built). Table 2-5 (page 2-22) suggests that the description of Alternative C in the summary Chapter is correct. There also appear to be discrepancies of Alternative D in the Summary Chapter and Chapter 2. We recommend that the descriptions of Alternatives be checked so that they are consistent throughout the EIS.

*Response:* These discrepancies have been corrected in the Final EIS.

**61. Public Concern: This plan has not gone out to the national taxpayers for comment, it has gone to local insiders so it is a scam, rip off deal.**

*Response:* Chapter 1 in both the Draft EIS and Final EIS has a discussion of the public participation and scoping procedures used in this project. The announcement of the project was made available to a national audience through the Notice of Intent to prepare and EIS and the Notice of Availability of an EIS, both published in the Federal Register. In addition, the Draft EIS is available for review on the Flathead National Forest's internet site and the project description has been posted in the Schedule of Proposed Actions for the Flathead National Forest, which are available nation-wide.

**62. Public Concern: in many of the analyses in Chapter 3, reference is made to "Exhibits" which apparently contain additional documentation and analysis. The "Exhibits" are not included with the DEIS and apparently available only by going to the Ranger District Office, thus making it very difficult to get some important information about several of the resources.**

*Response:* Inclusion of all material used to prepare the analysis in an EIS would make the document restrictively bulky. Project file exhibits for a project of this size would typically require twenty to thirty large notebooks.

**63. Public Concern: Montanans For Multiple Use submitted scoping comments and suggestions for the Sheppard Creek Post-Fire Project . We believe the DEIS does not represent a good faith effort to consider or address our scoping suggestions.**

*Response:* The scoping letter submitted by Montanans for Multiple Use on January 15, 2008 contained sixteen different comments, as identified by the ID Team. Each of these comments were assigned a category as to how they were used by the ID Team in the formulation of the Draft EIS (Exhibit E-15). Some of the comments were outside the scope of the project as they were not connected to the proposed action or needed be addressed at the Forest Plan level. The majority of the comments, however, were useful to the team as they influenced project design criteria, were addressed by measuring the effects of different alternatives, or were used to develop alternatives to the proposed action. For example is the comments related to the need to salvage burned material in riparian areas were incorporated into Alternative D. We made a good faith effort to consider the comments submitted by all.

**64. Public Concern: Sell these sales as quickly possible to avoid further deterioration of the timber.**

*Response:* A substantial effort has been made to complete the environmental analysis as quickly as possible so that timber sales can be offered in a timely manner if an action alternative is selected in the Record of Decision.

**65. Public Concern: Make helicopter units optional or sell them as a separate sale.**

*Response:* Selling helicopter units as a separate timber sale would create overlapping timber sale boundaries. Timber harvest units that require helicopter yarding are currently being offered as optional removal in Region 1 of the Forest Service due to poor wood product market conditions and the high cost of using helicopters.

**66. Public Concern: In this alternative, please include a full analysis of the opportunities and benefits of road obliteration, restoration of areas damaged by recent wildfire suppression, reduction of sediment from areas that are existing sources of the problems, and of natural recovery, including a description of the conditions that would result from natural ecosystem recovery patterns. Such an alternative would fully comply with Amendment 19. This alternative should also exclude logging from roadless areas (both inventoried and uninventoried roadless areas), from the periphery of roadless areas and from all riparian areas. We request the FS adopt the Restoration Principles (DellaSala, et al., 2003) as a screen for proposed actions such as those proposed for the project area.**

*Response:* An alternative to fully comply with Forest Plan Amendment 19 is not necessary since the project area is not located in the Northern Continental Divide Ecosystem and Grizzly Bear Management Situations 1, 2, or 3 that are addressed by Amendment 19.

The project area is not located in or near any inventoried roadless areas or undeveloped areas.

Three of the four alternatives do not propose salvage harvesting in riparian areas.

The restoration principles discussed in Appendix 1 of the DellaSala et al. 2003 publication are generally referring to restoration in areas not in a large post-fire environment. However, many of the principles are applicable to post-fire management projects. The principles of project planning, multi-level assessments, adaptive management, workforce sustainability, and public participation were all incorporated into the planning process for the Sheppard Creek project.

**67. Public Concern: I support the “Purpose and Need” as described on page 1-5. It would also be good to add a clause which states you are fulfilling the requirement of the law established in 1905.**

*Response:* Your support is noted. Your reference to the “law established in 1905” would be a reference to the 1905 “Use Book.” This book was a set of regulations and instructions on the use of the National Forest Reserves issued by the Secretary of Agriculture. This book was not law. The quote you use in your comment is presented as general information and direction in the Use Book.

**68. Public Concern: We further request that the agency follow the best available science in developing the basis for and implementation of project activities. We maintain (and the courts have agreed) that this evaluation of scientific information must include that science specifically referred to in comments by the public (such as this letter) or other agencies, as pertaining to the project at hand.**

*Response:* The ID Team and Responsible Official have used the best available science in developing this project. All of the references to scientific information in the comments on the proposed action and the comments on the Draft EIS have been evaluated by the ID Team and documented as to how the information was used (Exhibit V-1).

**69. Public Concern: The identified purpose and need: Recover Merchantable Wood Fiber in a Timely Manner is unreasonably narrow and leads to just one action which is more logging.**

*Response:* The responsible official determined early in the planning process that a broader purpose and need than that identified in Chapter 1 would create a more complex project with longer timelines. The timely removal of wood products is important to capture the greatest value for the American taxpayer before substantial wood deterioration begins. The responsible official will consider and is able to select the No Action Alternative that proposes no logging.

**70. Public Concern: Arbitrarily leaving basic timber inventory information out of site-specific disclosure of the existing situation and failure to consider any economic use of wood fiber other than sawlogs is a violation of NFMA, NEPA and APA.**

*Response:* Please see the response to Public Concerns #7, 9, 10, and 11 above.

**71. Public Concern: Although the FNF refers to the Brush Creek Fire as “catastrophic” it provides no explanation of what “catastrophic” might mean, much less any evidence to support this claim. The notion that wildfires, even if stand replacing, are catastrophes is simply an unfounded, value driven disservice that the FNF is foisting on the public.**

*Response:* The term “catastrophic” is not used in the description of the fire in Chapters 1 and 2 of the Draft EIS. The term is used in the Vegetation, Fisheries, Old Growth, and Scenery Resource sections of Chapter 3. Catastrophic is a term used in the National Forest Management Act and describes a condition resulting from fire, insect and disease, or windstorm events. In this context, catastrophic can be a term used to describe the Sheppard Creek Project area.

**72. Public Concern: Given the forest composition of the area and its fire history, there is little evidence provided by the FNF that the Brush Creek Fire was ecologically catastrophic. To the contrary, and as highlighted in the above quotes, the most significant ecological catastrophe that has occurred in the project area is the intensive historical treatment of the project area as a tree farm and the FNF’s extensive history of logging, tree planting, road building and alteration of wildfire’s influence. How is the current proposal to be viewed as anything more than additional ecologically catastrophic treatment on top of what already exists? How can the FNF claim to be safeguarding its congressionally mandated responsibility to maintain fish and wildlife populations, soil productivity, water quality and quantity if this proposal is simply more of the same treatment that represents the real ecological catastrophe?**

*Response:* The Forest Plan for the Flathead National Forest is a comprehensive document that identifies a wide variety of natural resource management direction in the form of goals, objectives, and standards. The Forest Plan has been time-tested, with many amendments incorporated to reflect current ecological and scientific thought. Monitoring reports at both the project and forest level have shown the project area was meeting Forest Plan direction for areas such as fish and wildlife habitat, soil productivity, and water quality prior to the Brush Creek Fire. In addition to meeting Forest Plan direction, all applicable Federal and State laws related to management of the national forests have been met during implementation of past projects. By complying with Forest Plan direction and Federal and State law as is stated under the Regulatory Consistency headings in the individual resource sections of Chapter 3, our management strategies as outlined in this Final EIS for the Sheppard Creek Project area safeguard our congressionally mandated responsibilities.

**73. Public Concern: Grazing should be permanently suspended in the burned area to protect soils and streams.**

*Response:* Grazing has been temporarily suspended in the burned area for at least two years. Annual assessments will be conducted to determine when vegetation has recovered to the point when grazing will be allowed in the allotment again. The objective of the assessments will be to determine when vegetation has recovered to the percent ground cover that existed prior to the fire. The assessments will be presented to the District Ranger who will decide when to resume grazing. A permanent suspension would not be appropriate as experience and research has shown vegetation such as grasses, shrubs, and trees typically recover quickly enough that grazing can resume three full grazing seasons after the fire has occurred, even after moderate to high severity fires. Please see Exhibit U-6 for post-fire grazing guidelines that will be used to determine when grazing can resume.

**74. Public Concern: Although the purpose and need of the Sheppard Creek proposal may have, disappointingly, been restricted the prosaic and historically consistent desire for intensive timber harvest, it must do so while balancing other values associated with the public's land, the fish and wildlife which share it and the processes which allow them to thrive. What stringent ecological safeguards has the FNF put in place to minimize the negative impacts of post-fire logging?**

*Response:* Please see the response to #69 above. The responsible official recognizes there are environmental effects associated with post-fire timber salvage, some of which may be negative. The Features Common to all Action Alternatives in Chapter 2, descriptions of the alternatives in Chapter 2, Best Management Practices described in Appendix I, and the monitoring outlined in Appendix E all prescribe safeguards to eliminate or minimize negative environmental effects. If an action alternative is selected in the Record of Decision, these features will be incorporated through an interdisciplinary process into the timber sale contracts, service contracts, and instructions to Forest Service employees. Experienced timber sale administrators and contracting officer's representatives will ensure contract provisions are properly implemented.

## **Access Management**

**75. Public Concern: Roads often have devastating impacts on water quality and fish habitat by increasing landslides, erosion, and siltation of streams. Roads also fragment forests and degrade or eliminate habitat for species that depend on remote landscapes, such as grizzly bears, wolves, and other large, wide-ranging predators (Trombulak and Frissell 2000).**

*Response:* We agree with these statements. However, the road reclamation implemented from past projects, road closures for wildlife security implemented from past projects, improvements to drainage features during implementation of Burned Area Emergency Recovery (BAER) activities, implementation of Best Management Practices on timber haul routes, and the natural recovery of unused roads through natural revegetation all contribute to the reduction of the impacts of roads on the landscape. The proposed alternatives do not contribute any increases in the miles of forest roads and Forest Plan road density requirements are being met (please see the response to Public Concern #82 below).

**76. Public Concern: Please fully disclose the short and long term impacts of temporary road building to watershed health, aquatic organisms including fish species, to weed spread, soil productivity and functionality and watershed hydrological function. Is the FNF's position that**

**temporary roads only have short term impacts but have no effect once they are removed? If not, please disclose what medium to long term effects temporary roads have.**

*Response:* The short- and long-term impact of temporary roads varies by resource area. Some impacts are short-term while other impacts are longer-term. The full impacts of temporary road construction in both the short and long term are disclosed in each of the Chapter 3 resource sections of this Final EIS that you mention in your comment.

**77. Public Concern: What condition are the historical roads that will be rebuilt for this project currently in and what impacts will rebuilding them have to project area resources? This has not been included in the DEIS.**

*Response:* A description of the condition of the historic roads was an oversight of the ID Team in the DEIS. A discussion of the condition of these roads is now included in Chapter 2 of the FEIS. Essentially, the temporary roads on historic templates were system roads constructed to the best road construction standards of their day but later removed or decommissioned from the Forest's transportation system for a variety of reasons. The road template, drainage ditches, and ditch relief culverts are typically still in place. Stream crossing culverts may or may not have been removed. Many of the roads have been naturally revegetated with grass, shrubs, and thick clumps of alder. Reconstruction of the roads would typically only require the replacement of stream culverts and possibly brush cutting.

Most of the impacts of historic road reconstruction are related to water quality, wildlife, and fisheries. An expanded discussion of these impacts are now included in the Hydrology section of Chapter 3. The Snags and Downed Wood Wildlife Habitat section and the Canada lynx portion of the Threatened Wildlife Species section also contain analysis of the impact of these actions.

**78. Public Concern: Although some of the resource sections mention roads, there is little analysis of the effects of past roads, much less the contribution of new roads that are proposed to be built in this project. This is true for the analysis of soils, grizzly bears, big game, fisheries, and water quality. These effects, especially the cumulative effects, must be analyzed and disclosed in the FEIS.**

*Response:* No new permanent system roads are proposed in this project. New temporary roads would be obliterated, which means to recontour the temporary road to its original slope or near its original slope. It may also include placement of natural debris or revegetation with shrubs or trees. Culvert removals and stream restoration would occur where roads to be obliterated intersect streams. Temporary roads built on historic templates would be returned to the condition or near the condition the road was in before they were reconstructed for use on this project.

The effects of the current road system and past road construction vary by the individual resource area. The Soils analysis does not consider the effects of roads and road construction because these are considered a permanent removal from the soil resource. The Grizzly Bear and Big Game resource analysis sections both contain considerable analysis in both the Final EIS and project file exhibits regarding the effects of the existing transportation system on these species. The Fisheries and Hydrology resource sections discuss road impacts primarily from their contributions to sediment in streams. The sediment analysis has been substantially expanded in the Final EIS.

**79. Public Concern: Public funds are proposed to be spent to open and then physically close access that should be considered for long-term multiple uses. We believe it is a violation of NFMA and NEPA to refuse to consider alternatives to provide additional needed opportunities for public motorized recreation in a 25,000 acre project area.**

*Response:* Public motorized recreation and access management was fully analyzed for the project area in the Sheppard Griffin Environmental Assessment (1996) and Good Creek Resource Management Project Final Environmental Impact Statement (2000). The Sheppard Creek Post-Fire Project has made no attempt to change the decisions made in those projects regarding motorized access.

**80. The DEIS discloses that once field surveys are done any units in old-growth forest habitat will be dropped but what is unclear is whether roads through old growth will also be dropped. Will they?**

*Response:* In the FEIS alternatives, no new temporary roads would be built through old growth habitat. As disclosed in the FEIS in the Environmental Consequences section for Old Growth Habitat and Old Growth Associated Wildlife Species, four temporary roads in Alternative B could have impacts on old growth or recruitment old growth habitats. Alternative B would construct new temporary roads along the edge of unburned existing old growth habitat and through recruitment old growth. Another temporary road would use an existing template outside the fire area that passes through old growth and what may be recruitment old growth. See Exhibit Q-7 (effects on old growth habitat and recruitment old growth) for a map of these roads with old growth habitats. Forest Plan Standard H6 states that “road construction associated with vegetation management actions shall avoid or minimize impacts to old growth to the extent feasible.” The Record of Decision for the Sheppard Creek Post-Fire Project would be consistent with this standard. See Exhibit Q-10 (consistency with Flathead National Forest LRMP old growth direction).

**81. Public Concern: MFMU believes that FNF could collaborate with this club to designate two or more loop trails in the fire area and then work together to monitor and maintain the trails including weed control.**

*Response:* Your offer to monitor and maintain two or more loop trails in the fire area is generous. We welcome opportunities to establish volunteer agreements to manage existing trails on the Flathead National Forest. Please contact the District Ranger.

**82. Public Concern: There is no mention whether any Forest Plan direction is applicable to road density management. What are the Forest Plan standards for open road densities in the project area and are they being met? Why doesn't this project have any access management proposed as have all other fire salvage projects on the Flathead?**

*Response:* Forest Plan standards for unrestricted open road density in the project area is mentioned in the grizzly bear and gray wolf cumulative effects analysis on page 3-266 of the Draft EIS. Details of existing open road density in the project area are displayed in Table 3-83. The Forest Plan standards for unrestricted open road densities are also found on page II-63 of the updated Forest Plan. As Table 3-83 shows, these standards are not being exceeded.

Not all fire salvage projects on the Flathead National Forest have proposed access changes, notably the Little Wolf Fire, Spruce Beetle Salvage, Swaney Salvage, and Crazy Horse III Fire Salvage projects. Other recent fire salvage projects on the Flathead National Forest have proposed access management changes in response to Forest Plan Amendment 19. Amend-

ment 19 management direction is not applicable on the portion of the Tally Lake Ranger District that the Sheppard Creek project is located.

**83. Public Concern: Flathead Audubon Society commented previously that the pre-existing extensive network of roads should be used for salvage and minimize any new roads. So why then are so many miles of temp roads and opening historic roads necessary and being proposed? The use of new temporary roads and historic templates needs to be eliminated or at least further reduced.**

*Response:* Previous comments regarding minimizing new temporary road construction from Flathead Audubon Society and others were captured in Issues 5 and 6 in the Draft EIS. Alternatives C and D responded to these issues with minimizing new temporary road construction as compared to the Proposed Action. The road construction proposals in the alternatives are necessary to fully investigate the opportunities to meet the purpose and need of the project.

**84. Public Concern: 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 should be considered for obliteration.**

*Response:* The post-fire erosional stability of roads in the project area is carefully analyzed in the watershed and soils section. The existing road network is managed to minimize erosion through the use of Best Management Practices. No areas of high erosion potential were identified from "Soil Survey of Flathead National Forest Area, Montana" (Martinson and Basko 1998) when new road construction location was proposed in the alternatives. Field verification of erosion potential for new road construction was conducted by the project soils scientist in the summer of 2008.

## Silviculture

**85. Public Concern: I have an issue with the changes that were made to the above mentioned "burn severity" table. Not only did it disappear, but it appears you changed a lot of the acres from "low or no" severity to "moderate" severity. If I get this right- it appears that upon "ground truthing" the photos you found that "underburning" of boles would eventually kill some trees. So even though the trees are alive after the fire and would be classified as low (less than 30% killed)- they might die- so you change it to "moderate severity."**

*Response:* Fire severity in the table referred to in the December 2007 scoping document was based on satellite data gathered in September 2007, before the fire was completely out. Satellites and air photos cannot "see" below the forest canopy for an accurate assessment of vegetation fire severity. Much of the Brush Creek fire had underburns of various severities that would be impossible to detect through the green foliage. Field exams were conducted in September through November of 2007 and again in July through September of 2008 to inventory for several resource conditions, including fire severity and tree mortality. These exams focused on stands with potential for timber salvage, so few of the past harvest areas were examined. Fire severity estimates in the DEIS and FEIS were based on these exams. Where no exams were available, air photos were used by comparing similar nearby stands that had exams. The FEIS includes a summary of the mortality guidelines used to predict tree mortality in Chapter 2, "Features Common to All Action Alternatives." The Vegetation section in Chapter

3 includes a description of the vegetation fire severity classes and Table 3-10 displays fire severity by pre-fire structure classes. Most of the acres shown as “Seedling/Sapling” and “Small” structure classes were regenerated from past timber harvest.

**86. Public Concern: 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.**

*Response:* Forest structure classes in the Project Area before and after the Brush Creek fire are discussed in the Vegetation section, Chapter 3 of the FEIS. Pre-fire acreage and patch sizes of seedling/sapling forest (which originate from past regeneration harvesting) are disclosed, and Figure 3-2 displays a map showing the location of this forest structural stage. About 38 percent of the fire area was in an early seral or stand initiation stage prior to 2007, mostly a result of regeneration timber harvesting during and after a large mountain pine beetle outbreak in the early 1980s. In addition, some of the 1994 Little Wolf Fire area reburned in the Brush Creek Fire. Expectations of conifer regeneration in the Fire area are discussed in this section of the FEIS also, under “Conifer Regeneration and Reforestation.” Much of this assessment is based on local research conducted at the Miller Creek Demonstration Forest (Exhibit P-9). A review of the FACTS activity database for stands within a 46,400 acre area in and near the fire area shows that 48 percent of the area was harvested before the fire and 92 percent of the harvested acres are certified as stocked with regeneration. The acres not certified are in the Gregg Plume and Upper Good timber sales that have been harvested in the last two to three years; many of these units have not been planted yet (Exhibit P-16).

**87. Public Concern: And there is a very small number of acres in the “no burn” category. I’ve seen several and have pictures of several regenerated lodgepole pine clearcuts where fires “stopped” at the boundary. I mean no surface burn or anything (I’ve also seen them with surface burns). I think you should double check the “no burn” acreage.**

*Response:* We agree there are stands of seedlings or saplings regenerated from past timber harvest that had patchy low fire severity or no fire. The fire severity classification was based on whole stands and reflects either the most abundant or an average of the fire severities within the stand. Where a stand had fire damage around the edge or in patches within the stand, it was considered low or moderate fire severity, depending on what proportion of the area had fire and an estimate of what percentage of the trees are expected to die. See the response to Public Concern #85 above and the Vegetation section in Chapter 3 for more detail on how fire severity was determined.

**88. Public Concern: We are opposed to the use of the dying trees category as commensurate with dead trees. Any mortality guidelines used will result in some measure of living trees that would have survived were they not treated as dead trees and therefore logged. Any proposal to harvest dying trees should analyze the effects of harvesting living trees, since by definition dying trees are currently living and some proportion of those dying trees that will be harvested would have survived otherwise.**

*Response:* The mortality guidelines were developed using available research and experience with past fires in northwest Montana. They are based on probabilities of mortality and bark beetle attack to predict which trees are likely to survive and which are likely to die (Exhibit P-15). The purpose and need for the project is to “recover merchantable wood fiber in a timely manner.” Therefore, the probabilities chosen for the mortality guidelines were selected to predict trees that would die over the next five years, recognizing that “no model is 100 percent

accurate” (Hood et al. 2007). Some trees predicted to survive would die and some trees predicted to die would survive. The Final EIS also states in several places that some currently live trees would be removed, if they are below the diameters required for retention, or to facilitate logging (such as in skyline corridors). The effects of harvest on the various resources considered the uncertainty related to predicting bark beetle attacks and mortality. See the response to Public Concern #40 above.

**89. Public Concern: Another point that is clearly made by Thompson et al (2007) is that unburned areas or areas burned at low and mid severities burned at lower intensity in subsequent fires than either salvage logged or unlogged areas burned at high severity. Therefore, the FNF should include in its analysis a distinction between the effects of its proposed post fire logging in areas burned by different severities.**

*Response:* Vegetation fire severity from the Brush Creek Fire is central to the vegetation, wildlife, dead wood, old growth, and soils analyses and was included as a variable in the bark beetle hazard prediction models. The soils and hydrology analyses in Chapter 3 also used soil burn severity to assess effects of salvaging trees in the Sheppard Creek Project. See the response to Public Comment #19 for a discussion of fuel loading in relation to fire intensity and severity in treated stands.

**90. I would like to suggest you bring back the “burn severity” table in the FEIS.**

*Response:* See Chapter 3, Tables 3-6 through 3-11, Figures 3-1 through 3-3, and the associated descriptions of the existing vegetation condition. This information was in the DEIS and was modified to reflect additional information from field exams in the summer of 2008. Also, see the response to Public Concerns #85 and #87.

**91. Public Concern: The Figure 3.2 map of the pre-fire does not show any stands >20” dbh yet Figure 3.3 shows stands >20” dbh left after the fire? How can this be?**

*Response:* The following statement was added to page 3-23 of the FEIS to clarify how size or structure class was determined. “Size class is an average of all trees in the stand. Where the smaller diameter trees were killed and larger diameter western larch and/or Douglas-fir remained alive, the average diameter, thus size class, increased.”

**92. Public Concern: Alternative D responds somewhat to our riparian area concern, however there appears to be a much greater opportunity area since Alternative D only harvests 40% of the stands susceptible to beetle outbreaks. We believe additional opportunities exist to capture wood fiber and reduce beetle breeding...**

*Response:* The existing condition and effects analysis in the FEIS have been updated to reflect the latest information from monitoring of beetle activity and ground-truthing of stand risk. Please refer to Chapter 3 under the Bark Beetle section for updated values associated with harvest in beetle susceptible areas. Also in this chapter, there is acknowledgement that there are many acres rated at some level of susceptibility to bark beetles that would go untreated under all alternatives. These stands are scattered through the fire area and were not identified as high priority for salvage because they are either mostly alive, have low volume per acre, difficult access, or less susceptible Douglas-fir or spruce trees than indicated by the rating process. Some are in old growth and late seral stands that survived the fire or have a high proportion of trees that survived. Some are past seed tree or shelterwood harvest with leave trees or regeneration that is large enough to support beetles. Many had high crown vegetation fire severity and have few, if any, susceptible trees left; but were identified as a

hazard because of other stand characteristics. Although they may be low hazard, these stands do have some susceptible trees and beetles may infest some of these areas. They may therefore contribute to the potential beetle population in the project area, but it is not likely they will sustain high beetle populations, except in small areas. You are right that additional opportunities exist to reduce beetle habitat but they are precluded by other resource values, including economics and sale viability.

**93. Public Concern: In addition to unjustified “reserve areas” we note that (DEIS p. 3-36), “Units and portions of units considered in this draft EIS will be dropped from the final proposal if surveys in the summer of 2008 find they have enough live trees remaining to still function as old growth or recruitment old growth (late seral/old forest). We do not understand why excess dead trees cannot be salvaged even if there are healthy live trees to be left. Getting excess sound dead wood out will reduce future fuel loads and improve leave trees chances to survive the next fire.**

*Response:* The valuable ecological role of dead, dying, and downed trees, particularly in the post-fire environment, is discussed on pages 3-207 through 3-214 of the FEIS. Retaining large live or dead trees in burned areas contributes to long-term old growth habitat, as described in the “Old Growth” and “Snags and Downed Wood” sections in Chapter 3 of the DEIS and FEIS. The impacts of salvage harvest on wildlife species that use snags and downed wood as habitat are disclosed in this FEIS on pages 3-208 through 3-218. Forest Plan Resource Management Goal 10, states: “Maintain and recruit old growth forests to an amount and distribution that is within the 75% range around the median of the historical range of variability. Where current conditions are below this amount, actively manage to recruit additional old growth.” There is also an objective that “sufficient retention of forest structure (large diameter live trees, snags, and coarse woody debris)” should be left to provide for future wildlife movement through the matrix surrounding old growth forests. See Q-9 (Reference conditions for Old Growth Habitat and Other Mature Stands) and Q-10 (Consistency with Flathead National Forest LRMP old growth direction) for more information.

**94. Public Concern: MFMU believes the predetermined “reserve area” decision is outside the scope of the project purpose and need and violates both NEPA and NFMA. When, where, and why was there a decision to incorporate “reserve areas” into a salvage project where the vast majority of the project area is MA-15 where cost effective timber production is to be achieved? Where is there any direction for burned landscapes, “...to function as burned landscapes have in the past”, and that “...a substantial proportion of the burn should remain undisturbed.” (DEIS, p.3-35) There is not only no Forest Plan direction for such “reserves” within MA-15, but there is no science that says there is any need for such reserves within a managed forest.**

*Response:* The Final EIS text on page 3-35 states “If the Sheppard Creek Project landscape is to function as burned landscapes have in the past, then a substantial proportion of the burn should remain undisturbed. The degree to which alternatives provide for a fully functioning ecosystem is a measure of how well overall ecological integrity might be maintained.” This is provided as background information for the analysis of Forest Structure in the Vegetation section, not as Forest Plan direction. Setting aside larger burned areas, particularly where unlogged, was proposed as a significant issue by some members of the public as the best way to assure retention of ecosystem function across the landscape. This issue is identified as Issue #4 “Post-Fire Reserve Areas Should Be Left Unsalvaged” in Chapter 2 and was incorporated into the design of Alternative C. The Responsible Official determined this issue had enough value to be compared against other alternatives that did not incorporate this issue.

**95. Public Concern: We suggest riparian areas and streambanks along eroding and sensitive reaches of Sheppard 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.**

*Response:* Shrub planting that is proposed in riparian areas for wildlife security and on obliterated temporary roads for weed control and soil stability would contribute to the riparian functions you mention. However, the need for planting with the specific objective of improving riparian function was not identified through either the vegetation, soils, hydrology, or fisheries effects analyses. We expect natural regeneration of trees, shrubs, forbs, and grasses in these areas to be adequate to meet your concerns.

**96. Public Concern: Considering this framework, how can the FNF propose to log so much of the remaining unlogged landscape (up to 95% in Alt. D)? How will leaving so little of the forest unlogged in this area, which has already been heavily affected by past logging, road building fire exclusion and grazing, affect biodiversity, ecosystem function, soil productivity and water quality and hydrologic function? Although the DEIS lists some numbers that estimate the amount of extra impact the proposed activities will have, it does not assess what the effects of this added impact will be to important resources. Of the up to 95% of forest that will have been logged if this proposal is approved how much of the medium and large tree habitat will have been logged? In the unlogged forest that remains how much of it will consist of medium and large tree habitat?**

*Response:* Table 3-16 in the DEIS estimated that with Alternative D, 23 percent of the analysis area would remain “undisturbed” by timber harvest; in the FEIS, that estimate is 30 percent. This means that with implementation of Alternative D, the alternative with the most acres of harvest, 70 percent of the project area would have had timber harvest. The discussion following Table 3-16 states that of the “undisturbed” area, “Around 7 to 9 percent is in the understory reinitiation stage (9 to 20 inch size classes), where some overstory trees survived. The late seral stage, where most of the overstory trees survived, comprises about 1.6 percent with Alternatives B and D, 2.0 percent with Alternative C, and 2.3 percent with Alternative A. The mid-seral stage comprises less than one percent of the area (Exhibit P-21).” These seral stages are based on post-fire structure classes. The late seral stage roughly equates to the stands dominated by trees greater than 20 inches diameter and the mid-seral stage equates to stands in the 5 to 9 inch class. The structure classes for the “disturbed” area (51 to 70 percent of the analysis area, depending on alternative) were not calculated but most would be in the 0 to 9 inch diameter classes. Tables 15b and 15c now show pre-fire and post-fire structure classes that would be affected by salvage. Also see the responses to Public Concerns #85, #86, and #91.

**97. Public Concern: The FNF responded to this request by creating a type of post fire reserve, which it defines on p. 3-214 of the DEIS as: “an area at least 150 acres in size that is at least a quarter mile from post-fire salvage.” We request a map be included in the FEIS that displays the spatial dimensions and location of the post fire reserves for each alternative since this information was not included in the DEIS. An accompanying table which displays the distribution of stand structural classes and species composition by burn severity with acreage values for each reserve would be useful.**

*Response:* Exhibit Rg-11 presents maps of the post-fire reserve areas for the existing condition and under each action alternative. Information provided in the DEIS and in Table 3-65 and associated narrative on pages 3-211 through 3-225 in the FEIS provide information that

included the area's spatial dimensions, snag habitat availability, past harvest history, stand structural classes, and vegetation burn severities.

**98. Public Concern: How does the Sheppard Creek proposal take fire's beneficial, in fact essential, role in shaping ecosystem function and maintaining biodiversity into account? How does it take the vital nature of early seral or post-fire environments to species viability into account, especially considering how rare unlogged certain post-fire environments are in the Northern Rockies?**

*Response:* The environmental effects of salvage logging and not salvaging (Alternative A) on various resources are described in Chapter 3 of the FEIS. Although we may not have used the terminology you suggest, the concepts of structure, function, species richness, and diversity are discussed in both the vegetation and wildlife sections. One wildlife species in particular, the black-backed woodpecker, is closely associated with unlogged recently burned forest habitats. This species is analyzed in the Sensitive Wildlife Species section of Chapter 3 (FEIS pages 3-283 to 3-288), and in Exhibits Rs-6 (assessing available black-backed woodpecker habitat at the ecological province scale) and Rs-10 (black-backed woodpecker existing condition, effects analysis, and background information).

**99. Public Concern: Relative to the 1941 conditions described by the scoping letter, most of the pole-sized stands and a little under half of stands larger than pole-sized were converted into sapling sized stands, implying that much of the large tree habitat in the project area has already been lost. How much of this was due to previous logging? How much due to wildfire? How much due to insects? These differences are important because insect attack would likely have left many of the larch alive, since they are more resistant to attack than lodgepole. Fire would likely have left variable numbers of living pole to large sized trees standing as remnants, although maybe not as many as insect attacks. Since most of the logging done in this area was regeneration harvest it is likely that logging has left the least amount of pole to large sized trees in areas that it has converted to sapling sized stands. Please disclose how much of the conversion from pole and larger than pole sized stands to sapling sized stands since 1941 were due to insect attack, wildfire and logging respectively. How much acreage with remnant live or dead trees exists in the project area and how much is proposed for logging? How are remnant medium or large-sized trees accounted for in the FNF's stand classification system? For instance, do the FNF's seedling/non-stocked or sapling sized stands include any medium or large remnant trees?**

*Response:* About 11,200 acres (44 percent) of the fire area were treated with regeneration harvest between the 1950s and the 2007 Brush Creek Fire. Many of these acres were harvested with seed tree and shelterwood systems that leave some of the largest trees, usually western larch and Douglas-fir, for seed, shade, and structural diversity. Some of the harvest was with clearcut systems that left no live trees, but usually some large dead trees (snags). All of the stands regenerated through past timber harvest were pole-sized and larger. The Brush Creek Fire returned 1,994 acres that were burned in the 1994 Little Wolf fire. About 1,050 acres of this area was salvage harvested and regenerated after the fire. About 644 acres regenerated without harvest and about 300 acres retained live overstory to remain in the medium and large (9 to 20 inch diameter classes). For a discussion of structure classes and how they were determined, see Chapter 3 Vegetation and responses to Public Concerns #85, #86, #91, and #96.

**100. Public Concern: The DEIS reader is referred to Exhibit P-15 to understand the criteria used for determining the trees that are expected to die, and thus, be salvaged (i.e., post-fire mortality guidelines). Since salvage of trees that may appear to be alive and healthy in salvage**

harvest can be a controversial issue, we recommend that the post-fire mortality guidelines or at least a summary of them be included in the FEIS, perhaps in the Appendices.

*Response:* A summary of the mortality guidelines has been added to Chapter 2, Features Common to All Action Alternatives, Retention of Live Trees.

**101. Public Concern:** While we understand what is meant by tree planting, we are not sure of the distinction between tree planting and “interplanting,” and note that “interplanting” was not defined in the Appendix A glossary. We suggest that a definition or description for interplanting be included in the glossary to improve public understanding of this term.

*Response:* “Interplanting” is defined as planting of conifer seedlings among seedlings that already exist on the site. This term is used in situations where we expect a limited number of conifer seedlings to naturally regenerate within the unit, but we need to plant additional seedlings to ensure the site is adequately stocked with young trees after treatment. “Interplanting” has been added to the glossary.

**102. Public Concern:** 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.” Also, 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:* The purpose and need for the Sheppard Post-Fire Project is to “recover merchantable wood fiber in a timely manner.” Areas selected for salvage harvest were guided specifically by this purpose and need and by the dominant Forest Plan management objective across the project area of emphasizing the cost efficient production of timber while protecting the productivity of the land and timber resource (refer to FEIS Chapter 1). The range of historical conditions for various resources was used to provide a reference for desired conditions and environmental effects, not as a goal for restoration. For vegetation, the methodology for assessing historic patterns that was used for Flathead National Forest Amendment 21 appears to be the most relevant and accurate. This process uses information and methods from the ICBEMP for Ecological Sub-region 19. See responses to Public Concerns #29, #39, and #49 and Exhibits P-6 and Q-9.

**103. Public Concern:** Providing a “conversion factor” for the public to use to convert CCF on all stands is technically incorrect. The ratio of board foot/cubic foot varies by average diameter of the trees so that a factor of 0.4545 underestimates board foot volumes of stands with average diameter in excess of 16 inches and overestimates stands with average DBH less than 16 inches.

*Response:* That is correct; the CCF to MBF varies based on tree size and shape. A sentence was added to page 3-25 to help clarify this. The timber volume estimates used in the DEIS and FEIS are from “walk-thru” exams and preliminary reconnaissance plots. The volumes are reported in classes and as averages because they are estimates (see Chapter 3, Vegetation). The actual sale volumes will be determined from a timber cruise prior to contract preparation.

**104. Public Concern:** We also recommend that the post-fire tree mortality guidelines err on the side of leaving trees that may or may not die, rather than taking trees where mortality is

**uncertain, in order to recognize the value of remaining live trees in a burned forest ecosystem. We suggest that this policy be specified so that the Forest Service staff carrying out the estimations understand that they should retain borderline trees in regard to their survival, rather than to harvest them. We particularly favor retention of the borderline larger trees of desirable tree species whose overall composition is in decline (e.g., western larch, western white pine, white-bark pine, Ponderosa pine).**

*Response:* In all proposed units; all ponderosa pine, and all western larch greater than 16 inches diameter would be retained. In many units, all western larch would be left regardless of mortality. See Chapter 2, Snag/Live Tree Prescriptions. There are no whitebark pine in the analysis area and few western white pine. White pine are treated in the whitewood category for applying the mortality guides. See the response to Public Concerns #40 and #88 and Exhibit P-15 for discussions on how the mortality guidelines were developed.

### **Snags and Downed Woody Material**

**105. Public Concern: As managers we should be planning for a “constant” population of snags and not high swings in the number of snags. We need to leave adequate numbers but not excessive numbers.**

*Response:* Dramatic swings in the availability of snags are inherent in the natural disturbance regimes of the forests of northwest Montana and are important for many wildlife species and ecosystem processes (Exhibit Rd-12). The retention of snags in the action alternatives is a compromise between historic ecological patterns and the desire to recover merchantable wood fiber.

**106. Public Concern: We also recommend that the wildlife biologist review the salvage harvest areas to ensure that high quality, large diameter snags are protected, as well as trees with nesting birds.**

*Response:* A standard in the Forest Plan requires monitoring of “implementation and effectiveness of live tree, snag, and coarse woody debris retention in timber harvest treatment areas.” Exhibit Rd-10 (post-activity monitoring for snag and downed wood habitat wildlife species) presents the monitoring done so far in post-fire projects. Appendix E of this FEIS outlines the monitoring for snag and downed wood retention that would be implemented if an action alternative is selected and documented in the Record of Decision.

**107. Public Concern: We are concerned about potential adverse impacts to wildlife associated with the appreciable loss of snags and downed wood habitat with Alternatives B and D, particularly to wildlife species such as the black-backed woodpecker and pileated woodpecker that use snag and cavity habitat.**

*Response:* We acknowledge there are impacts to wildlife that use snag and cavity habitat. These impacts are presented in the FEIS on pages 3-214 through 3-225 and on 3-286 through 3-288. In particular, the action alternatives would remove up to 13 of the 19 potential black-backed woodpecker home ranges. Across the Flathead National Forest side of the fire area, western larch over 12 inches DBH, would be reduced a small amount, from about 5.3 per acre to 4.6 per acre. For Douglas-fir over 12 inches DBH, this reduction would be from the current 10.4 per acre to as low as 6.0 per acre. Nevertheless, the prescriptions would supply snags over time through the retention of live trees and higher numbers of snags than generally required when harvesting timber from green forests. In addition, all alternatives would be con-

sistent with NFMA direction for diversity of plant and animal communities and ecological sustainability. See also Exhibits Rd-3 (Snag and downed woody material habitat and effects analysis), Rd-4 (snag and downed wood habitat species biology and management background information), Rd-9 (Potential Changes in Large Diameter Snag Densities, Snag Recruitment Opportunities, and Impacts on Snag-dependent Species in Region One), Rd-13 (deadwood habitat prescriptions and rationale), Rd-14 (cumulative effects considerations for snags), Rg-1 (Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities), Rs-9 (cumulative effects considerations for sensitive wildlife species), Rs-10 (black-backed woodpecker habitat and effects analysis), and Rs-20 (Conservation Assessment of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl, and Pileated Woodpecker in the Northern Region, USDS Forest Service).

**108. Public Concern: It is a great concern to Flathead Audubon Society that the snag prescriptions do not appear to be based primarily on the habitat requirements for the large variety of species dependent on snags and downed wood. On pg 3-209 it says that snag prescriptions were based on a variety of things but none of them say they were based on wildlife requirements. Why not? Pg 3-211 says that for all action alternatives salvage harvest would reduce the acreage that has a relatively high density of larch and Douglas-fir by nearly half. How is this compatible with proper management for wildlife species dependent on snags and downed wood?**

*Response:* In developing the snag prescriptions, wildlife habitat requirements were the first consideration before all of the others listed. This oversight was corrected in the FEIS on page 3-216. In addition, the retention of snags in the action alternatives would be consistent with snag standards included in Amendment 21 to the Forest Plan. See Exhibit Q-10 (consistency with Flathead National Forest LRMP old growth direction).

**109. Public Concern: It is not clear where the prescribed numbers (diameters and number/acre) came from... The Forest Plan direction for snags and downed wood in Forest Plan Amendment 21 apparently contains no definite numbers, only motherhood statements that make it easy to say that all Alternatives comply with Forest Plan Direction.**

*Response:* As described in Chapter 2 of the FEIS (pages 2- 14, 2-22, and 2-30), the minimum retention diameters by species are intended to keep the largest snags and the vast majority of the live trees within the salvage units. Across the acreage in all but one of the prescription groups, an average of eight of these larger trees and snags per acre is expected to remain after salvage. Pages 3-211 through 3-213 of the FEIS and Exhibit Rd-3 (snag and downed woody material habitat and effects analysis) present a detailed quantification of snags. See also Exhibit Rd-13 (deadwood habitat prescriptions and rationale). Exhibit Q-10 (consistency with Flathead National Forest LRMP old growth direction) provides the numerical numbers in the Amendment 21 snag and downed wood numbers. Also, please see the response to Public Concern #108, above.

**110. Public Concern: Chapter 3 appears to say that the prescription for leaving snags and downed logs in harvest units is the same for all alternatives but that Alternative C harvests considerably fewer acres. It does say on page 3-214 that Alternatives B and D would provide less than optimal short-term and long-term snag and downed wood habitat for numerous wildlife species. On page 3-215 it says that Alternative C would provide sufficient short-term and long-term habitat. What is the basis for this conclusion? There are no literature citations or reference to specific analysis that can be reviewed.**

*Response:* The conclusion is based on extensive analysis of the needs of wildlife species that use snag and downed wood habitat, and on the impacts of timber salvage harvest and other

cumulative effects. This analysis is in the Snags and Downed Wood section of Chapter 3 of the FEIS. Supporting information for this analysis is found in Exhibits Rd-4 (snag and downed wood habitat species biology and management background information), Rd-13 (deadwood habitat prescriptions and rationale), Rd-3 (snag and downed woody material habitat effects analysis), Rd-12 (literature cited in FEIS: snag and downed wood habitat), and Rd-14 (cumulative effects considerations for snags and downed wood habitat).

## **Soils**

**111. Public Concern: Please disclose the scientific research information you have to indicate that helicopter yarding, winter logging, and skidding on slash mat materials will minimize damage to soils. The DEIS does not do so.**

**Response:** The Final EIS discusses the impacts of these logging systems in terms of detrimental disturbance and the effects analysis is consistent with approaches identified in published articles as well as validated by site specific monitoring of soil conditions. See the summary table in the Soils section in Chapter 3 of this FEIS and the soils monitoring reports in Exhibit U-5.

As specified in the “Features Common for All Action Alternatives” for Soils in Chapter 2, scheduled tractor logging on high soil burn severity units must utilize slash mats or be implemented in winter on frozen or snow covered ground to protect soils from erosion and disturbance. The Project Soil Scientist has evaluated proposed tractor units to determine if sufficient material exists to form a slash mat. Where material is lacking, logging systems have been changed to protect soils by using winter tractor operations. This would ensure that individual harvest units are protected from excessive soil disturbance.

The project design features for soils in Chapter 2 state that no ground-based equipment would operate on slopes greater than 25 percent in the summer and 40 percent in the winter, except where units have site specific conditions that the project soil scientist has field reviewed.

**112. Public Concern: We believe that high intensity forest manipulation as you are proposing will not lend towards restoring functional ecosystems. Rather, logging activities will lead to accelerated erosion and soil compaction and will disrupt the natural post fire regeneration. Fire is a natural and essential component of forest ecosystems. Hence, the presence of fire indicates high degrees of ecosystem function. Beschta et al., 1995 state, “Land managers should be managing for the naturally evolving ecosystems, rather than perpetuating artificial ones we have attempted to create.” We are concerned that logging will accelerate soil erosion and degrade soil productivity.**

**Response:** Refer to the Soil Erosion, Soil Organic Matter, and Soil Biology headings in the Soils Environmental Consequences section for discussion on these topics.

We realize that post-fire salvage logging produces impacts to forest resources. We also believe that effects to forest resources can be minimized with appropriate, site specific application of project design features and Best Management Practices (BMPs). We have analyzed how the alternatives would affect soil and watershed resources in the project areas. Specific design features to address your concern include:

- No new roads would be constructed within the project area.
- All skid trails would have erosion control features installed.

- Logging systems have been selected based on post-fire soil conditions. Helicopter logging and skyline logging would better protect soils over the effects of ground-based equipment. The majority of ground-based harvest would use winter conditions to minimize impacts. Summer ground based operations are only used where burn conditions are low to moderate intensity and sufficient green material is available to build a slash mat.

**113. Public Concern: The DEIS indicates that only proposed harvest units determined to have experienced past harvest will be surveyed by trained soil scientists to assess current detrimental soil disturbance. Given the known incompleteness of timber harvest records, especially for much older logging operations, and the coarseness of large scale analysis methods such as GIS or aerial photography, using this method makes the FNF vulnerable to inaccurate assumptions that some units have no detrimental soil disturbance. This can and should be ameliorated by site visits by qualified soils scientists to every proposed unit to determine whether past activities have created detrimental soil disturbances and if so, to then quantify their extent.**

*Response:* The soil scientist visited 70 percent of all units with emphasis on planned summer tractor harvested units that have a higher potential for soil disturbance. Field soil technicians trained by the soil scientist gathered data within all units on current soil conditions using the current R1 protocol (a review that is similar to the Howes (2000) qualitative assessment, a modified Browns method for coarse wood debris and frequency transects for groundcover). They also provided field notes on current conditions such as fire severity, erosion concerns and suitability for timber harvest. Field notes are available as Exhibit H-8 and a compilation in the Soils section of Chapter 3 in the Final EIS.

**114. Public Concern: We recommend that all harvest units that occur on high risk soils be considered for soils monitoring.**

*Response:* A subsample of high risk units will be used for monitoring after timber harvest. Post-harvest sampling will detail at least three units for winter tractor, summer tractor, and skyline harvest. Sampling is limited to a subsample of all units to ensure that monitoring is completed given limited funding. A list of the units to be monitored by alternative is found in Appendix E of this Final EIS.

**115. Public Concern: Aside from the incongruence of acknowledging that severely burned areas most benefit from downed wood and yet focusing post fire logging activities there, the FNF has not interpreted the content of the Beschta report correctly. As stated in our letter to Tom Tidwell dated 11-13-07, "Beschta et al (2004) recommend leaving all large trees and 50% of basal area in all other size classes." Showing that 50% of the standing biomass does not satisfy this condition as the FNF could be removing a substantial portion of the large trees and leaving primarily smaller trees that cumulatively account for most of the biomass, but not necessarily the greatest biological value, in a stand. The FNF should show how much biomass is being removed or will remain on site within each size class.**

*Response:* Much of the proposed harvest is prescribed to salvage trees with diameters at breast height of 9 to 15 inches within Douglas-fir, lodgepole pine, and subalpine fir dominated stands. Snag and downed wood requirements intend to leave the largest live and/or dead trees for wildlife habitat that also benefit soils. These large trees average eight per acre across the project area, though much of the area lacks large diameter trees greater than 20 inches (see Snag and Downed Wood Tables in Chapter 2). Retention concentrates on Douglas-fir and western larch tree species. The Final EIS has added detail on the species and most common

diameter size to contextualize the percent biomass calculations presented in the Draft EIS. Please also see the response to Public Concern #118 below.

**116. Public Concern: Is the extent of fire area with severely burned soils fully known? Are the 161 acres of Alternative B harvest and 611 Alternative D harvest in high risk soils areas shown in Table 3-51 the full extent of proposed harvests in areas with severely burned soils? It would be of interest to include a burn severity map showing the locations of high risk soils areas that burned at high severity to allow improved understanding of the location of harvest units and roads in relation to areas of high risk soils.**

**Response:** A map of burn severity has been added into the FEIS Soils Resource section in Chapter 3.

**117. Public Concern: The Forest Management Handbook at FSH 2509.18 directs the FS to do validation monitoring to “Determine if coefficients, S&Gs, and requirements meet regulations, goals, and policy” (2.1 – Exhibit 01). It asks what we are asking: “Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?”**

**Response:** The Region One soil quality requirements “provide benchmark values that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality based on available research and Regional experience. Proper application of these standards requires professional knowledge and judgment” (FSM 2554.02). In fact, the objective of soil quality monitoring is to meet the direction in the National Forest Management Act... to manage Forest System lands under ecosystem management principles without permanent impairment of land productivity and to maintain or improve soil quality (FSM 2554.02).

Significant changes in productivity of the land are indicated by changes in soil properties that are expected to result in a reduced productive capacity over the planning horizon. Based on available research and current technology, a guideline of 15 percent reduction in inherent soil productivity potential will be used as a basis for setting threshold values for measurable or observable soil properties or conditions. The threshold values, along with areal extent limits, will serve as an early warning signal of reduced productive capacity.

Handbook direction further states that the results of monitoring are to be used to evaluate resource management actions and recommend adjustments to practices or mitigation measures to prevent significant impairment of long-term soil productivity. Monitoring conducted on similar past actions on the Flathead National Forest provides clear evidence the Forest is instituting the monitoring and administrative studies needed to address land productivity concerns at the project level. Results of past soils monitoring on the Forest are summarized in the FEIS with more detailed results filed in the project record.

The management goal is to limit disturbances to the greatest extent possible and when necessary apply mitigation, restoration, and corrective actions so that the extent of detrimental conditions following implementation of all activities is at or below the Regional Standard. Application of BMPs, SWCPs and design criteria presented in the FEIS, as well as contract provisions provide these assurances.

Establishment of a threshold of 15 percent detrimental disturbance is supported by research indicating that when detrimental soil disturbance surpasses about 15 percent, it becomes difficult to mitigate or restore soil function and quality, ecosystem productivity, and off-site effects

(Daddow and Warington, 1983; Maser, 1997; Harvey, et al. 1997; Everett, 1994). The 15 percent standard is also documented in Powers, 2006 in his paper Long-Term Soil Productivity: genesis of the concept and principles behind the program.

The fifteen percent standard is not arbitrary and was derived by an independent committee of scientists appointed to form a framework for implementing NFMA. Consensus opinion held that a departure from base line would have to exceed 15 percent to be deemed significant. Continuing research is being conducted to validate the standard for maintaining long-term soil productivity.

The soils analysis in the Sheppard Creek Project considers variables in addition to those in the Regional soil guidelines (USDA 1999) for assuring maintenance of soil productivity. This analysis includes quantifying current conditions of groundcover, coarse wood, and depth of forest floor. Finally, the Flathead NF has invested extensively in performing field assessments and implementation monitoring. The field assessments provide site specific data used for a clearer articulation on current site conditions and potential soil productivity issues. The follow up monitoring provides feedback on the effectiveness of mitigation such as limiting operations to winter only tractor harvest and impacts from new harvest equipment (see Affected Environment heading of the Soils section of Chapter 3).

**118. Public Concern: Can the proposed harvest of 161 acres and 611 acres in high risk soils areas with Alternatives B and D, respectively (Table 3-51), be carried out in a manner that meets the Regional soil quality standard? Will the proposed snag and down wood management and soil protection measures allow the Regional soil quality standard to be met in all areas?**

**Response:** Yes, all units considered in the Sheppard Creek Post-Fire Project would meet the Forest Plan standard by complying with the regional guidelines discussed above. The project was designed to meet Forest Plan downed wood standards to ensure adequate biomass on site for continued recovery from the fire and fire salvage activities. Our objective is to maintain at least 50 percent of the current woody biomass on site, although some units will only have approximately 30 percent where low burn severity, ground based timber harvest, and planned biomass removal is planned.

**119. Public Concern: Are there any areas with potential for debris flows or areas of known mass failure in the Sheppard Creek project area? If so, we recommend that such areas with potential for debris flows or mass failure be avoided, and use of less disturbing logging methods with salvage harvests in areas with more severely burned soils and greater potential for erosion (e.g., use of helicopter, skyline or winter logging). We also recommend that locations of unstable and sensitive or highly erosive areas be flagged on the ground so that contractors can avoid them.**

**Response:** No mass wasting (debris flow or mass failure) hazards were found as a consequence of the logging activities. Horizontally oriented hard rock sediments that dominate soils in the project area are very stable and resistant to erosion with high amounts of rock and even slope shape.

**120. Public Concern: The DEIS does not provide the data on percent detrimental disturbance which the FS has collected even in the units it knows has experienced past harvest. This should be provided in the FEIS, preferably in a table such as 3-48 on p. 3-184 of the DEIS that shows the unit #, acreage, existing detrimental disturbance, harvest method, projected detrimental disturbance from project activities, and cumulative % detrimental disturbance from past and proposed activities combined. Furthermore, no assessment of the acreage of detrimentally**

**disturbed soils associated with past roadbuilding, including system and non system roads, is provided. It is not clear why projected detrimental soil disturbance is only provided for a handful of units listed in Table 3-51 and not all units. This must be included in assessment of detrimental soil disturbance and should be included in the FEIS. Given the broad range of observed detrimental soil disturbance, the only way to ensure that the FNF meets its obligation to maintain soil productivity in all units is to use the high value of this range in calculating projected detrimental disturbance. Otherwise, and unless the FNF can provide some useful means of estimation, an unknown number of units that were predicted to comply with the 15% standard will fail to do so.**

*Response:* This past summer season (2008) enabled field review of all units and specific assessment of current conditions. Though a number of units as listed in the DEIS had some past harvest history from timber records, the amount of detrimental disturbance from these past activities was minimal. For the Brush Creek Fire, the most severe burning occurred in areas that had minor disturbance from previous management. In these areas, forest floor duff and litter conditions were thick and ground vegetation was abundant. The Soils section in Chapter 3 of the FEIS now presents a summary of current detrimental disturbance within the affected environment and a broader presentation of the amount of disturbance from past harvest and road building (including non-system roads). In addition, a summary of all field data, including detrimental disturbance calculations, for all units is found in Exhibit H-1.

## **Threatened and Endangered Wildlife**

**121. Public Concern: No analysis of road impacts on grizzly bears or comparisons with Amendment 19 road standards is included in the DEIS even though grizzly bears are reasonably expected to occur in the area.**

*Response:* Amendment 19 road standards do not apply outside the Northern Continental Divide Ecosystem (NCDE) Recovery Area. However, grizzly bears are reasonably expected to occur throughout the project's analysis area. Table 3-89 on page 3-273 of the FEIS provides open road densities by Geographic Units to compare with Forest Plan direction that still applies to the Salish Range portion of the Forest. See also Exhibits Rt-5 (Biological Assessment for Terrestrial Wildlife Species, Grizzly Bear Management Direction Outside the Northern Continental Divide Ecosystem Recovery Zone), Rt-13 (grizzly bear management background), and Rt-14 (cumulative effects considerations for threatened and endangered species).

**122. Public Concern: EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation.**

*Response:* A Biological Assessment for Threatened and Endangered Wildlife Species (Exhibit Rt-4) was prepared and sent to the U.S. Fish and Wildlife Service in August 2008.

**123. Public Concern: Pg- I-11 this plan kills the lynx and snowshoe hare.**

*Response:* Salvage harvest and temporary road construction would have some negative impacts on Canada lynx and their main prey, the snowshoe hare. This is well documented in the FEIS on pages 3-264 through 3-266. Exhibit Rt-15 details how all aspects of the Sheppard Creek Post-Fire Project are consistent with the Northern Rockies Lynx Management Direction. See also Exhibits Rt-4 (Threatened and Endangered Wildlife Species Biological Assessment) and Rt-8 (lynx habitat across Sheppard Creek Post-fire Project Analysis Area, existing condition and effects analysis).

**124. Public Concern: In reference to the Lynx I am puzzled by the statement that the “natural process” after the fire is best for the Lynx. What research is being sighted for this statement?**

*Response:* As stated in Table 3-90 on page 3-275 of the FEIS, Objective VEG O1 of the Northern Rockies Lynx Management Direction states “Manage vegetation to mimic or approximate natural succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.” Also see Koehler and Aubrey 1994, Ruggiero et al. 2000, and Witmer et al. 1998. See Rt-15 (Canada lynx management and recommendation documents and consistency with Northern Rockies Lynx Management Direction).

**125. Public Concern: We have been told the most important element for the lynx is dense young stands which have good snowshoe hare populations. With encouragement of regeneration in the fire area – which means site preparation, planting, and seeding are you not improving on the natural process?**

*Response:* Depending on the condition of a landscape, accelerating the formation of sapling stands with artificial regeneration can be beneficial to lynx. This benefit may be marginal or lacking in an area dominated by early successional forests, most of which are either in dense sapling conditions or will regenerate naturally. As stated in the FEIS in the Environmental Consequences section for Vegetation (page 3-34), some loss of naturally regenerating seedlings “would occur with summer ground-based logging,” while planting conifers, where needed, can “hasten the revegetation process.”

**126. Public Concern: How is this project facilitating recovery of lynx and not adversely modifying critical habitat?**

*Response:* This project adheres to the Northern Rockies Lynx Management Direction as stated on page 3-276 of the FEIS and in Exhibit Rt-15 (Canada lynx management and recommendation documents and consistency with Northern Rockies Lynx Management Direction). The Regulatory Framework and Consistency section for Threatened Wildlife in Chapter 3 of the FEIS has additional information as to how the project would not result in adverse modification of proposed critical lynx habitat.

**127. Public Concern: We did not see a statement indicating that the proposed harvests and road construction activities would be consistent with the objectives, standards and guidelines in the Northern Rockies Lynx Amendment. We also did not see a Biological Assessment identifying the anticipated level of effects to threatened or endangered (T & E) species under the Endangered Species Act (ESA). The FEIS should identify the status of proposed activities in regard to consistency with the Northern Rockies Lynx Amendment, as well as include a Biological Assessment identifying the anticipated level of effects under ESA for all threatened or endangered species (e.g., grizzly bear, lynx, gray wolf, bull trout).**

*Response:* The determination statement for Canada lynx in the Regulatory Framework and Consistency section for Threatened Wildlife (page 3-272 of the DEIS) states that “All alternatives would be consistent with the direction found in the Northern Rockies Canada Lynx Direction.” This statement is also included in the FEIS on page 3-276. It then refers the reader to Exhibit Rt-15 (Canada lynx management and recommendation documents and consistency with Northern Rockies Lynx Management Direction). Also see Exhibit Rt-4 (Threatened and Endangered Wildlife Species Biological Assessment) and Exhibit F-1.

## **Water Quality**

**128. Public Concern: It would be of interest to identify the existing road density and road stream crossing density in the project area. EPA very much supports road decommissioning and reductions in road density and road stream crossing density, since increasing road density, especially road stream crossing density, has been inversely correlated with aquatic health in many areas.**

*Response:* Crossing density and road density values are included in the FEIS on Page 3-133.

**129. Public Concern: Flathead Audubon Society questioned the proposal for any harvest in MA 12 when one of the stated salvage criteria in the original proposed action was “outside riparian areas” but apparently harvest in MA 12 is still part of at least one of the alternatives. We didn’t see where the MA 12 issue was discussed anywhere other than at the top of pg 2-36. We maintain that these harvests in MA 12 are not consistent with the stated goal (pg B-1) of managing riparian areas to enhance vegetation and wildlife diversity because any harvest will not maintain or improve any wildlife and fish habitat values.**

*Response:* Alternative D does propose to harvest dead and dying trees from riparian zones. Forest Plan MA 12 is not mentioned specifically because riparian zones are addressed by the Inland Native Fish Strategy (INFISH). INFISH is a more comprehensive and inclusive management strategy that goes beyond the management direction in MA-12. Management activities in RHCAs (as described in INFISH) must not retard the attainment of Riparian Management Objectives (RMO). If salvage harvest were to occur in riparian zones, the FEIS contains specific protection measures to meet RMOs for “Special Treatment Zones.” See page 2-28 to 2-29 of the FEIS. Wetlands and riparian areas would be considered Special Treatment Zones in Alternative D and specific yarding methods would be used to avoid any impacts to wetland/riparian plants or soils.

**130. Public Concern: It would also be helpful if an anticipated schedule of implementation for projects activities, including watershed improvement activities, could be provided to allow improved understanding of when watershed restoration activities are likely to be implemented in relation to timber harvest and road construction activities...If funding to implement needed watershed restoration is limited, we suggest listing restoration activities which have assured funding (and which can be implemented on a timely basis), and restoration activities which need additional appropriated funds (and may be implemented at a later date), separately.**

*Response:* The Hydrology section of Chapter 3 of the FEIS contains additional details about watershed improvement work scheduled to be completed in the project area than what was presented in the DEIS. Prior to timber harvest work, road BMPs would be implemented on haul routes. This work would improve road drainage and would minimize or prevent sediment delivery to streams. As part of the BMP package, four undersized culverts would be upgraded. This work would be funded and implemented prior to or concurrent with harvest activities. In addition, a fish barrier would be removed on Cutthroat Creek when harvest activities are completed.

Road decommissioning in the Upper Sheppard Creek area is planned to be implemented during the next one to three years, depending on which alternative is selected in the FEIS. This work would rely on appropriated dollars. In addition, the Fisheries section of the FEIS discusses on-going stream restoration work on the headwaters of Good Creek.

**131. Public Concern: Alternate A, No action, assumes there are no consequences to not managing this area. The data shows greatly increased sediment loads without some type of restoration work.**

*Response:* The FEIS describes the potential for erosion and sediment delivery on burned areas under the Affected Environment heading of the Hydrology section in Chapter 3. This potential exists regardless of proposed timber harvest. Proposed salvage harvest is not expected to reduce potential sediment delivery. However, implementation of BMPs (and associated culvert upgrades) would reduce the risk of post-fire induced road and culvert failures.

**132. Public Concern: It is unclear where the assumption that using the average sediment production over a thirty year return interval WEPP model is appropriate for calculating background sediment production. Given the general inaccuracy of the WEPP model and the fact that sedimentation events due to wildfire are highly probabilistic, and may in fact not occur at all, using this data to say that sedimentation due to all past and currently proposed timber harvest activities is negligible and/or difficult to determine and therefore unimportant or acceptable is highly inappropriate. This amounts to the FNF casting aside its duties under NEPA and NFMA based on very loose analysis.**

*Response:* Predicted sediment delivery associated with salvage harvest is, in fact, very small compared to the post-fire landscape as a whole. The FEIS includes additional statements about the probabilistic nature of sediment delivery on proposed salvage units to provide consistency.

**133. Public Concern: We therefore encourage the Forest Service to visually monitor the surface hydrology in the project area throughout the project period, and allow for any modification to the project that would be necessary to protect water quality should significant hydrologic change be detected.**

*Response:* All timber harvest and road management activities would be monitored regularly by a timber sale administrator. Best Management Practices (BMPs) and Contract C provisions require constant observation of field conditions, especially soil moisture. Timber harvest activities cannot occur during wet periods to avoid damage to soil and water resources.

**134. Public Concern: We recommend no timber harvest, temporary road construction, or operation of heavy equipment in wetlands. We also recommend that treatment units be reviewed in the field to identify the presence of wetlands, and wetland and riparian buffer boundaries be identified on the Sale Area Map and flagged in the field so that timber contractors will be able to avoid them.**

*Response:* The implementation of any decisions made to salvage harvest will be made by experienced and trained foresters and forestry technicians. These individuals would avoid identifying treatment units in wetlands and other sensitive areas. In addition, the FEIS contains specific protection measures for "Special Treatment Zones," see page 2-28 to 2-29. Wetlands and riparian areas would be considered Special Treatment Zones in Alternative D and specific yarding methods would be used to avoid any impacts to wetland/riparian plants or soils.

**135. Public Concern: We also suggest that the resource management and environmental trade-offs associated with beetle infestations, treatments, and riparian and water quality/aquatic habitat impacts be more thoroughly compared and discussed.**

**Response:** The Hydrology section in Chapter 3 of the FEIS contains more detail about the effects of proposed salvage harvest (in Alternative D) on riparian areas, floodplains, water quality, and aquatic habitat.

**136. Public Concern: Considering the huge difference in potential sediment delivery deduced from models presented in this DEIS why does FS state, “Roads, road construction, and road maintenance are considered the major source of sediment from upland forested watersheds (Brooks, et al. 1991). “ And “Because forest roads are the major contributors of sediment, they represent the greatest concern in terms of non-point source pollution, water quality, and aquatic habitat.”**

**Response:** The statement about roads being larger sources of sediment refers primarily to unburned forests. As stated in Chapter 3 of the FEIS, roads tend to be chronic sources of sediment, while forested slopes tend to produce very little or no sediment, except when they are in a burned condition and experience a high intensity rain event.

**137. Public Concern: The analysis assumes that sediment production from wildfires is linearly related to the percent of area burned. There is no reason to assume that this relationship is true, unless some evidence that this is likely is presented. Furthermore, since baseline sediment production is not solely a factor of area burned, as discussed above, but rather related to the suite of impacts it has experienced including past timber harvest, grazing and road building it is not clear that wildfire area burned is an accurate parameter to correlate with sediment production. Some areas have been more heavily logged, roaded or grazed than others and therefore total acreage will not show a linear relationship with sediment production.**

**Response:** There is no conclusion in the FEIS that states sediment production is linearly related to the percent of area burned. In fact, the FEIS is clear about the extreme variability of sediment delivery at various spatial and temporal scales.

**138. Public Concern: We also suggest that any additional BAER or other projects that may have been conducted or which are planned to protect the Sheppard Creek watershed be discussed in regard to reducing existing sediment production...Also rehabilitation work to address watershed effects of fire suppression activities may be relevant to show that the sediment reductions associated with the post-fire restoration actions will exceed the sediment production for salvage harvests and road construction.**

**Response:** The FEIS includes more detailed information about BAER work that has been completed. Much of the BAER work was not completed during the development of the DEIS. Now that much of this work has been done, it is shown in the FEIS as beneficial to soil, water, and fisheries resources.

**139. Public Concern: The DEIS states that 3.5 miles of temporary road construction with Alternative B has a high potential for sediment delivery (page 3-167). We believe it is problematic to construct roads with high potential for sediment delivery in the watershed of a 303(d) listed stream.**

**Response:** Miles of proposed temporary road have been reduced in Alternatives C and D from the Proposed Action (Alternative B) to address this concern. In addition, the FEIS contains more detailed analysis of watershed improvement activities and how they relate to overall sediment production. The FEIS acknowledges concerns about the 303(d) status of Sheppard Creek and includes watershed improvement work to offset impacts to water quality of the proposed temporary road construction and timber salvage activities.

**140. Public Concern:** The DEIS indicates that BMPs would be improved on haul roads, and eight culverts would be replaced in the Sheppard Creek subwatershed in 2008 through the BAER program (3-142), and that 18.6 miles of road are scheduled for decommissioning in the next one to three years (pages 3-143), and that road improvements and culvert upgrades and road decommissioning would improve overall watershed condition in the long-term. It is not clear, however, if these proposed watershed restoration activities would fully compensate for the sediment production from proposed salvage logging and road construction with the desired margin of safety that would result in overall reductions in pollution with long-term water quality improvement and restoration of full support of beneficial uses for all alternatives.

*Response:* The Hydrology section in Chapter 3 of the FEIS contains more detailed information that compares the amount of sediment that may be produced by the action alternatives to the amount of sediment that may be reduced by restoration work. See pages 3-139 to 3-142.

**141. Public Concern:** Salvage harvests should be conducted in a manner that poses low risk to water quality and soils, with use of timber harvest methods that minimize ground disturbance and erosion potential; minimize new road construction; and also include watershed rehabilitation activities such as road BMP upgrades and road drainage improvements, road obliteration, revegetation, stream and bank restoration activities along with harvests. Watershed restoration activities are particularly important to drainages of 303(d) listed streams to help offset or compensate for sediment production associated with timber harvest and road construction activities, and thus, avoid further potential for degradation of 303(d) listed waters. EPA particularly recommends road BMP and drainage improvements and culvert replacements on forest roads, since roads are often the most common cause of adverse water quality impacts in forests.

*Response:* BMP improvements would be applied to all haul routes in the action alternatives. Timber harvest methods have been designed to pose low risk to water quality and soils by conducting a large amount of the ground-based operations to the winter conditions, limiting slopes that tractors can operate, requiring slash mats on tractor harvest units that are harvested in the summer, using skyline yarding systems on steeper slopes, and using helicopter yarding systems on units not accessible by roads. BMPs within harvest units would also be applied. Please refer to “Features Common to All Action Alternatives” in Chapter 2 for a complete discussion of design features used to minimize impacts to soils and water quality.

A sediment budget is included in the FEIS that articulates how watershed improvement activities would offset potential sediment production from management activities.

**142. Public Concern:** It appears to us that the riparian harvests proposed in Alternative D are likely to be inconsistent with water quality improvement and restoration of full support of the beneficial uses of Sheppard Creek. Accordingly, we are concerned that the Alternative D riparian harvests may not be consistent with TMDL and Clean Water Act goals to restore full support of beneficial uses to Sheppard Creek. We are opposed to inclusion of riparian harvests in the preferred alternative that would limit the restoration of water quality and full support of beneficial water uses in Sheppard Creek.

*Response:* We acknowledge your concerns regarding timber salvage in riparian areas. As explained above in the responses to Public Concerns #129 and #139 above, the limited amount of spruce and Douglas-fir salvage proposed in Alternative D for the purpose of limiting the potential damage to live trees in the fire area and live stands outside the fire area from a bark beetle infestation can be accomplished with minimal impact to water quality. Please also refer to the Hydrology section of Chapter 3 in this Final EIS.

**143. Public Concern:** It is extremely important the EIS disclose the environmental baseline for watersheds. Generally, this means their condition before development or resource exploitation was initiated. For example, the baseline condition of a stream means the habitat conditions for fish and other aquatic species prior to the impacts of road building, logging, livestock grazing, etc. Therefore, proper disclosure of baseline conditions would mean estimates of stream stability, pool frequency conditions, water temperature range—essentially the values of Riparian Management Objectives along with such parameters as sediment levels. When such information is provided, comparison with the current conditions (after impacts of development) will aid in the assessment of cumulative effects of all alternatives.

*Response:* Baseline conditions cannot be determined in the project area because meaningful data related to aquatic habitat and/or species was not collected prior to management activities beginning in the late 1940s.

**144. Public Concern:** The NEPA analysis should show whether or not your alternatives would comply with the Clean Water Act and all state water quality laws and regulations. Please note that designating BMPs is not sufficient for compliance with CWA and NFMA....Discuss the actual effectiveness of proposed BMPs in preventing sediment from reaching water courses in or near the analysis area. What BMP failures have been noted for past projects with similar landtypes? We would like to see a thorough discussion of the BMPs and mitigation measures you would propose. Please disclose the efficacy of BMPs for burned areas. Also, please disclose which segments of which roads in the watersheds to be affected by this proposal will not meet BMPs following project activities.

*Response:* The analysis presented in the Environmental Consequences heading and the conclusions stated in the Regulatory Consistency heading in the Hydrology section of Chapter 3 show the proposed activities in the alternatives are consistent with the Clean Water Act and all state water quality laws and regulations.

The effectiveness of Best Management Practices is thoroughly discussed with each of the individual Soil and Water Conservation Practices discussed in Appendix C of this Final EIS. BMP failures for past projects with similar landtypes have not been noted as is shown by the success of BMP audits. Audit results in similar landtypes and in post-burn conditions are found in Exhibit U-5. All segments of roads affected by this proposal will meet BMPs following project activities.

**145. Public Concern:** 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. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where 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, streambank stability and subsequent sedimentation.

*Response:* Please refer to the Environmental Consequences heading in the Hydrology section in the FEIS as it addresses all of these concerns. The project file contains an RHCA map that includes all known riparian and wetland habitats. Potential effects of management activities on these areas are discussed in the FEIS. Livestock grazing impacts are monitored regularly through the PACFISH/INFISH Biological Opinion (PIBO) program, and by the Ranger District's fisheries biologist. All monitoring information is located at the Tally Lake Ranger District Office and PIBO monitoring results for the Tally Lake Ranger District are located in Exhibit U-5.

**146. Public Concern: When will the Flathead develop a TMDL for Sheppard Creek? Why are you even proposing activities in an impaired waterbody?**

*Response:* Development of TMDLs is the responsibility of the Montana Department of Environmental Quality. Rationale for proposed management activities are found in the Purpose and Need section of Chapter 1 of the FEIS. The Clean Water Act allows for management activities to occur in watersheds that have impaired water bodies. The FEIS recognizes sediment would be produced by our management actions; however concurrent restoration actions would improve water quality conditions as is described on pages 3-139 to 3-142 of the Hydrology section in Chapter 3.

**147. Public Concern: Salvage harvest would occur in 54, 33, and 68 acres in Alternatives B, C, and D (respectively) in areas that are defined as seeps or springs that could function as elk moist sites. (DEIS pg. 3-243) How can you log in seeps and springs?**

*Response:* Small, isolated wet areas such as springs, seeps, and bogs are difficult to accurately display on maps. These areas would be avoided by using a 75 foot buffer during timber sale preparation operations to protect important aquatic and wildlife species.

**148. Public Concern: This is especially true where past logging, grazing and other activities permitted by the FNF have led to significant impairment of the watershed, as is the case in the project area, where Sheppard Creek is listed as a 303d stream. Even if the amount of sediment introduced by project activities is small relative to background levels, it does not mean that it is acceptable or negligible and that it does not need to be quantified as accurately as possible and have its effects analyzed. As is documented in the DEIS itself both water quality and fisheries have been heavily impacted by past logging, road building and grazing. This calls into question how much more damage due to the proposed activities is acceptable at all, even if small relative to the damage caused by past activities and the recent fire. The FNF's position appears to be that because extensive damage to native fisheries has already occurred, to the extent that large areas of the Tally Lake district which historically supported healthy fish populations, including bull trout, no longer can do so, that further damage is acceptable because it cannot make bull trout and possibly many other species, since it is an indicator species under the FNF Forest Plan, any more extinct locally than they already are.**

*Response:* We agree management actions in an impaired waterbody such as Sheppard Creek need to be considered carefully. The Hydrology section in Chapter 3 of the FEIS now contains a more detailed analysis of how restoration work such as road BMPs, culvert improvements approved during BAER efforts, and road decommissioning approved in the Sheppard Griffin Decision Notice would offset potential impacts of proposed management activities. Please also see the response to Public Concern #130 above.

There is no evidence that bull trout have utilized the Griffin, Sheppard, and Good Creek drainages for the past several decades. As stated on pages 3-161 and 3-167 in the Fisheries section of Chapter 3 of this FEIS, neither Good Creek nor Logan Creek (of which Sheppard and Griffin Creek are tributaries) are considered critical habitat for bull trout recovery.

**149. Public Concern: The analysis assumes that sediment production in burned areas is due solely to wildfire effects. This does not account for the interaction between wildfire effects and past timber harvesting, road building or other human activities such as grazing and recreational motorized use. Sedimentation in previously roaded and logged areas cannot be ascribed solely to the wildfire, but this analysis appears to do so. This analysis completely denies the FNF's responsibility to conduct cumulative effects analysis.**

**Response:** The Hydrology Section of Chapter 3 of the DEIS and FEIS includes estimates of sediment that could result from summer salvage logging, road construction, road reconstruction, culvert installation/removal, culvert replacements, and culvert upgrades. We clearly state that this sediment production is in addition to the potential sediment resulting from the wild-fire. The WEPP model and Equivalent Clearcut Acre (ECA) calculations account for past actions. The cumulative effects analysis in this and the Fisheries section also includes other past, present, and reasonably foreseeable actions. Please also see the response to Public Concern #130 above.

**150. Public Concern: We also encourage the Forest Service to consult MDEQ's TMDL Program staff to assure that the MDEQ considers the proposed Sheppard Creek Post-Fire Project to be consistent with MDEQ's development TMDLs and Water Quality Plans in the Sheppard Creek Drainage.**

**Response:** A copy of the DEIS was sent to MDEQ and EPA. EPA submitted comments on the DEIS and they are addressed in the FEIS. In addition, Forest Service personnel met with an EPA representative and toured the project area to discuss concerns about water quality.

## **Noxious Weeds**

**151. Public Concern: We also note that hay can be a source of noxious weed seed. Hay/straw is used as mulch to slow erosion and encourage seed germination, and used to feed horses in hunting and recreation camps, and as wildlife feed during harsh winters. It would be helpful to assure that certified weed free hay is used.**

**Response:** Hay could be used for erosion control during project implementation. The Northern Regional (R1) Supplemental (R1 2000-2001-1) to Forest Service Manual directs the use of certified weed-free or weed-seed free hay (FSM 2080 R1 Supplement 2081.2 – 1(a)(5). Direction states “Minimize sources of weed seed in areas not yet revegetated. If straw is used for road stabilization and erosion control, it must be certified weed-free or weed-seed free.”

**152. Public Concern: Make plans for weed control both during and after timber harvest. We need to be wise in the way we spend our money.**

**Response:** Surveys for noxious weeds within the project area were conducted and mapped in 2008. Mitigation measures to reduce the potential for noxious weed introduction and spread are included in the design features for all alternatives. Haul routes that have been surveyed for noxious weeds would be scheduled for one pre-haul chemical treatment and one post-haul chemical treatment. These treatments are included in the timber sale contract. In addition to the chemical treatments, noxious weed informational materials of target species would be provided to contracted workers in the project area emphasizing the importance of spread prevention measures and communication of infestations to Forest personnel. Other weed control measures include washing of equipment, seeding with certified weed-free materials on disturbed sites such as landings, obliteration and replacement of topsoil on temporary roads as soon as practical after the temporary road is no longer needed, and use of winter logging on some units to reduce soil disturbance where new weed seeds could establish. See Final EIS, Chapter 2, Features Common to all Alternatives, Noxious Weed Control.

**153. Public Concern: All sites with disturbed soils such as landings, skid trails, and along roads should be seeded with weed-free native grass seed.**

**Response:** A design feature for all alternatives includes “Reestablish vegetation on bare ground created at log landings with a Montana-Certified weed free grass ground cover (seed mix of native plants will be specified by the Forest Botanist), as soon as feasible after disturbance to provide for site protection until native species are established.” See Final EIS, Chapter 2, Features Common to all Alternatives, Noxious Weed Control.

Although the Final EIS design features do not explicitly list skid trails for seeding, a contract clause commonly used, C6.601# - EROSION CONTROL SEEDING, includes the seeding of exposed areas such as skid trails, landings, firebreaks, slides, slumps, temporary roads. During project implementation, forest personnel would determine the need for seeding at skid trails. Vegetation from areas surrounding skid trails are often pulled onto skid trails to decrease bare soil exposure and to promote natural revegetation. The surrounding vegetation that is pulled onto skid trails often retains seed.

Seeding along roads within the project area is not included in the design features for all alternatives. However, we have acquired funding to seed approximately 60 miles of roads within the Brush Creek Fire area. This seeding is expected to occur by the end of fiscal year 2010, after chemical treatments of haul routes. A cost-share agreement with the Montana Conservation Corps is currently in place to implement this seeding project. In addition, funding for seed purchase has been obligated to this project.

**154. Public Concern: We also encourage prioritization of management techniques that focus on non-chemical treatments first, with reliance on chemicals (herbicides) being the last resort.**

**Response:** Weed control management direction and control methods are not included in the Sheppard Creek EIS. Treatment of weed populations in the project area would be implemented under the authority and guidance of the Flathead National Forest Noxious and Invasive Weed Control Decision Notice (May 2001) and Environmental Assessment (March 2001) (Exhibit T-1). We use an integrated management approach to weed control. Although chemical treatment is a large portion of the program strategy for weed control, other management strategies are employed such as biological controls, seeding, mechanical treatments (hand pulling), and early detection and prevention. The use of non-chemical control methods, alone or as the last method in a series of strategies, would be less effective in containment and control of new and existing weed populations. Weed population size, location, and species are all factors in determining a strategy of control and containment. Larger occurrences may need chemical or biological controls as the initial control followed by monitoring and/or seeding. Other smaller occurrences may be treated by hand pulling. Hand pulling of large populations is not cost efficient. In addition, biological controls are less effective in smaller size/density occurrences, because biological control species require minimum plant densities in order to maintain viable populations.

Biological controls (*Tyria jacobaeae*, cinnabar moth) for tansy ragwort (*Senecio jacobaea*) have been used in and around the Little Wolf Fire area (to the south of the Brush Creek Fire). Surveys were conducted in 2008 in order to evaluate the need for additional releases into the Brush Creek Fire area. Several nursery sites for increasing biological control species populations within the area were identified. Two releases have been conducted on the east perimeter of the Brush Creek Fire area (just outside the burn) and additional release sites have been identified for 2009 releases. Other biological controls, ragwort seed head fly (*Botanophila seneciella*) and tansy ragwort flea beetle (*Longitarsus jacobaeae*), are also known to exist within

the area. Active release of these species is not scheduled at this time. Surveys prior to the fire indicate that the flea beetle is currently spreading into the southern portion of the Brush Creek Fire area.

Seeding after chemical treatments within the project area would also occur (see response to Public Concern #153).

Other integrated management approaches include early detection and prevention. Surveys have been conducted to map and detect new occurrences of noxious weeds. Early detection will help managers assess priorities for small populations that can be controlled before spread increases. In addition, project design features for all alternatives include education of contractors to assist with early detection during implementation. Informational materials of target species would be provided to contracted workers, emphasizing the importance of spread prevention measures and communication of infestations to Forest personnel (see Final EIS, Chapter 2, Features Common to all Alternatives, Noxious Weed Control).

For prevention, project design features for all alternatives include the washing of equipment prior to entering the project area. The design feature states “Off-road equipment use associated with timber harvest and road maintenance would be power scrubbed or steam cleaned on the undercarriage and chassis to remove all soil, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds before transport to and from the project area.” (See Final EIS, Chapter 2, Features Common to all Alternatives, Noxious Weed Control).

**155. Public Comment: One of the biggest problems with the FS’s failure to deal forthrightly with the noxious weed problem on a forest wide basis is that the long-term costs are never adequately disclosed or analyzed. The public is expected to continuously foot the bill for noxious weed treatments—the need for which increases yearly as the FNF continues the large-scale propagation of weeds, and fails to monitor the effectiveness of all its noxious weed treatment plans to date. There is no guarantee that the money needed for the present management direction will be supplied by Congress, no guarantee that this amount of money will effectively stem the growing tide of noxious weed invasions, no accurate analysis of the costs of the necessary post-treatment monitoring, and certainly no genuine analysis of the long-term costs beyond those incurred by site specific weed control actions.**

**Response:** The Final EIS, Chapter 3, Invasive Plant Species, summarizes the cumulative effects of the no action and action alternatives with respect to noxious weeds. For all alternatives, weed infestations are expected to increase due to both exposed soils resulting from the Brush Creek Fire and due to ground disturbance resulting from the proposed activities.

For all action alternatives, pre- and post-haul chemical treatments along haul routes are included in the timber sale purchasing contract. Pre-haul treatments along haul routes is a prevention measure to reduce the spread of pre-existing weeds into newly disturbed areas created by the proposed activities. Post-haul treatments would assist in further reducing the risk of spread upon completion of the proposed activities. The objectives of the weed treatments associated with action alternatives are to reduce the short-term potential for new establishment into the new disturbed areas created by this project, not to reduce the total infested acres of the project area.

For the no action alternative, chemical and seeding treatments are scheduled and funded by congressionally appropriated funds specified for post wildland fire rehabilitation activities.

The Final EIS, Appendix E, Monitoring Plan states, “Noxious weeds would be surveyed and monitored in all ground-disturbed areas in treatment units (slash piles, exposed soil from excavator tracks, skid trails), roads, and temporary roads. Monitoring would occur for at least three years following proposed action.” Monitoring and treatments following proposed activities would occur as funding is available. Should weeds be discovered, treatment will be consistent with the strategy outlined in the Flathead National Forest Noxious and Invasive Weed Control Decision Notice (May 2001). We do not expect an increase in funding specifically to treat or monitor new weed infestations potentially resulting from the proposed activities. Future treatments and monitoring needs in the Sheppard Creek Project area would be considered with the annual budget constraints of the existing weed management priorities across the Forest.

Currently, we are developing a forest-wide inventory of high-risk areas and project areas having high potential for weed introductions. These baseline data will assist with monitoring of the effectiveness of mitigation measures designed to reduce the potential of weed spread and new establishment within project areas. Baseline data and subsequent year monitoring will be entered in a national database, Natural Resources Inventory System (NRIS), for weed inventory and monitoring. Noxious weed population trends can be tracked within the database and correlated with treatments. Although currently we are unable to make inferences from these data (as the database is newly developed), the Forest does recognize that it is important to monitor and track the effectiveness of mitigation measures and treatments. This database will assist the Forest with a better understanding of the treatment effectiveness.

**156. Public Concern: Please include in your analysis the possible effects of noxious weed introduction on sensitive plant populations and other components of biodiversity. Please include in the analysis the results of monitoring of noxious weed infestation from past management actions in the Districts.**

**Response:** Effects to sensitive plants and habitat are discussed in the Final EIS, Chapter 3- Threatened and Sensitive Plants. The Final EIS, Chapter 3, Invasive Plant Species, also summarizes that for all alternatives, weed infestations are expected to increase due to both exposed soils resulting from the Brush Creek Fire and due to ground disturbance resulting from the proposed activities. Increases in weed populations could pose serious threats to the biodiversity components (composition, structure, and function) of native plant communities. Noxious weeds can have detrimental effects to the plant community altering its composition and function (Thorpe, et al. 2006; Yurkonis, et al. 2005).

See response to Public Concern #156 for discussion on monitoring of weed infestations from past management activities.

**157. Public Concern: We also encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database.**

**Response:** Surveys for noxious weed occurrences were conducted in 2008 for the Sheppard Creek Project. Maps of surveyed areas and estimations of net infestations of weeds were recorded on standardized data sheets. These data will be included in a national-level database (NRIS) that maps weed occurrences for the FNF. Treatment of weeds is also recorded in a national database, Forest Activities (FACTS) that tracks activities such as chemical, biological, and mechanical treatment of weeds (among other forest activities). One component of the FACTS database is a mechanism to revisit weed treatment sites to evaluate the efficacy of the treatments. Approximately 50 percent of treatments on the FNF have been visited annually (in 2006 and 2007) to record efficacy. Trends from these data have not been analyzed and are not available at this time.

## **Other Wildlife**

**158. Public Concern: Once again temporary roads will affect wildlife. One of the temporary roads in Alternative B is near a ridgeline; these typically function as corridors for wildlife.**

*Response:* The use of ridgelines by wildlife was noted several places in the DEIS and is found in this FEIS on pages 3-228, 3-241, and 3-261. Analyses of the effects of temporary roads on wildlife and their habitat were done for wildlife species and their habitats. This was done most extensively for snags and downed wood habitat (FEIS pages 3-220 and 3-221), old growth habitat and old growth associated wildlife species (FEIS page 3-236), riparian habitats (FEIS pages 3-256 to 3-257 and 3-297), and Canada lynx (FEIS pages 3-265 to 3-266).

**159. Public Concern: NEPA requires the FS to consider biological corridors. The continued fragmentation of the Forest also needs to be a major analysis issue for this proposal. 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.**

*Response:* Forested corridors and blocks of interior forest existed across the fire area before the fire. Largely due to the high intensity fire that burned the lower portion of the Sheppard Creek drainage, forested connections within the fire area now exist only in a few areas along the periphery where they are contiguous with larger blocks of “interior forest” that is outside the fire area. These are described in the FEIS in the Fisher portion of the Sensitive Wildlife Species (page 3-288) and throughout the Old Growth Habitat and Old Growth Associated Wildlife Species section (FEIS page 3-227). The Sheppard Creek Post-Fire Project would not affect any large blocks of interior forested habitat. An analysis of effects on connectivity is presented for old growth (FEIS page 3-235), big game (FEIS page 3-249), and fisher (FEIS page 3-292). Also see Exhibits Rb-10 (forested connectivity relevant for big game), Rg-7 (connectivity within and beyond the Sheppard Creek Post-fire Project Analysis Area), and Rs-8 (fisher habitat and effects analysis).

**160. Public Concern: Why does this project log any larch or Doug fir since it is in short supply (as either snags or live trees) and is valuable wildlife habitat?**

*Response:* No larch over 16 inches DBH is prescribed for removal in any alternative. Most of the large Douglas-fir would be removed in the interest of reducing Douglas-fir bark beetle populations. See the responses to Public Concerns # 52 and #108 above. Impacts to wildlife that use snag and cavity habitat are presented in the FEIS on pages 3-214 through 3-225 and on 3-286 through 3-288. See also Project File Exhibit Rd.

**161. Public Concern: Temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the FNF. It is also of paramount importance to monitor population trends (as mandated by the Forest Plan) during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability...**

*Response:* The Flathead National Forest has prepared a report titled “Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities” (Project Record Exhibit Rg-1) that addresses this concern. This report analyzes the status of wildlife forest-wide on the Flathead National Forest. Several Project Record Exhibits including Q-6, Rb-2, Rd-11, Rn-4, Rr-4, Rs-5, and Rt-7 provide additional information

on wildlife monitoring and observation records. These records were used to establish the reliability of habitat-based status estimates for wildlife populations.

**162. Public Concern: Why are high severity burns in Douglas-fir or larch old growth not also excluded along with moderate and low severity burns.... To be clear, our request is that no areas which currently meet, or prior to the fire would have met, old growth criteria or served as effective or recruitment old growth habitat be logged. This would include forests of all habitat types irrespective of the severity fire they experienced. It is clear from the language in the DEIS that the FNF intends to log old growth forest that was burned at high severity and no longer meets Green et al (1992) criteria. The DEIS states on p. 2-35 that this is because “Old growth forests do not stay old growth indefinitely.” Frankly, this is a laughable position, especially given past extent of harvest that has taken place in mature and old growth forests in the project area and the lack of an effective strategy in the Brush Creek Fire area, the Sheppard Creek project proposal, the Tally Lake Ranger District, or the Flathead National Forest that progressively and proactively promotes the creation of new old growth and fosters the processes which form them.**

*Response:* Please see the response to Public Concern #44, above.

**163. Public Concern: In a project area where 58% (12, 870 acres) of the land has already been logged, including much of the large trees and mature forest, how can the current approach to reserve creation that emphasizes placement of logging units before reserve creation be justified?**

*Response:* The Purpose and Need of the Sheppard Creek Post-Fire Project (page 1-5 to 1-6 of the FEIS) is to “recover merchantable wood fiber in a timely manner.” Thus, it makes sense to identify possible reserve areas after multiple concerns with various salvage units have been identified. For example, salvage units and temporary roads in the southwest portion of the project area seem to have many concerns (including hydrologic, soils, fisheries, Canada lynx, big game, black-backed woodpeckers, and economics), so this area became a logical post-fire reserve area in Alternative C.

**164. Public Concern: ...the FNF appears to depend largely on the downed and dead woody debris criteria of the FNF’s Forest Plan Amendment 21 to provide adequate habitat for many TES, MIS, old growth dependent and fire dependent species at the minimum levels necessary to maintain their viability. However, the DEIS does not reconcile this strategy with information in the DEIS itself that past logging, road building, and fire suppression have caused great degradation across a majority of the project area and that the proposed action would only add more to the currently impoverished conditions...the DEIS never clarifies how this reduction is consistent with its mandate to maintain the viability of the black backed woodpecker or other fire dependent species that it serves as a proxy for. A similar lack of consistency between the FNF’s requirement to maintain viable wildlife populations and the seemingly bleak habitat conditions described in the DEIS that exist within the project area is demonstrated for fishers as well as other old growth and snag dependent species. To a lesser, but still very significant extent, similar information is presented for Canada lynx, grizzly bear, and big game species including elk. The DEIS does not reconcile how such degraded conditions are consistent with the FNF’s responsibility to ensure the viability of fish and wildlife species that reside there. This should be ameliorated in the FEIS.**

*Response:* The Forest Plan accounts for the ecological importance of retaining large trees, snags, and downed wood across the landscape through several goals, objectives, and standards. No claim was made that meeting the downed and dead debris criteria included in

Amendment 21 to the Forest Plan is all that is needed to maintain viable populations of any wildlife species.

The DEIS and FEIS contain an honest portrayal of wildlife habitat conditions in a severely burned post-fire environment. Such areas often provide little or no habitat for some wildlife species until post-fire recovery is well underway. As described in many places in the FEIS, dramatic swings in habitat availability for some species are inherent in the natural disturbance regimes of the forests of northwest Montana and are important for many wildlife species and ecosystem processes. The cumulative impact of aspects such as past logging, fire suppression, and road building are presented in the Cumulative Effects sections for Snags and Downed Wood (FEIS pages 3-222 through 3-225 and Exhibit Rd-14), Old Growth Habitat (FEIS pages 3-236 through 3-238 and Exhibit Q-8), Big Game (FEIS pages 3-248 to 3-250 and Exhibit Rb-6), migratory birds and riparian habitats (FEIS pages 3-257 to 3-258 and Exhibits Rn-6 and Rr-7), threatened wildlife (FEIS pages 3-270 through 3-273 and Exhibit Rt-14), and sensitive wildlife species (FEIS pages 3-281 through 3-283, 3-287 through 3-288, 3-291 through 3-293, 3-299 through 3-301, and 3-304 through 3-305; and Exhibit Rs-9).

Also see Exhibit Rg-1 (Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities). This assessment was done at multiple scales, including the Forest and Regional scales, and explains why we believe viable populations would be maintained. It was determined that viability of any wildlife species is not at risk after a full investigation on the effects of the proposed action and additional cumulative impacts. Further, the analysis did not show that the proposed project would preclude individuals from interacting with others in the planning area.

**165. Public Concern: All action alternatives have a severe depressing effect on black-backed woodpecker home ranges as shown in table 3-86 on pg 3-282. The finding on pg 3-331 of “MIIH” is obviously based on habitat somewhere other than in the fire area. This finding is not consistent with that for westslope cutthroat trout in the Fisheries section.**

**Response:** While updating the black-backed woodpecker existing condition to reflect field information gained in spring and summer 2008, an error was detected that had caused a major underestimation of the species' habitat and thus the number of potential home ranges. As shown on page 3-287 of the FEIS, there are currently 10,217 acres in 19 potential black-backed woodpecker home ranges. For an updated analysis of the effects on this species' habitat, see FEIS pages 3-286 through 3-288 and Exhibit Rs-10 (black-backed woodpecker habitat and effects analysis). The finding of “MIIH” on page 3-331 was indeed based on habitat beyond the Flathead National Forest side of the Brush Creek Fire Area, following the Black-backed Woodpecker Regional Overview (Exhibit Rs-6, Assessing available Black-backed woodpecker habitat at the ecological province scale).

**166. Public Concern: Table 3-86 contains wrong numbers in the column titled “# of Home Ranges Remaining After Salvage.” According to the narrative just above the table the correct numbers are “6, 1, 2, 0” respectively.**

**Response:** The order has been corrected in the FEIS. However, while updating the black-backed woodpecker existing condition, a larger error was detected that had caused a major underestimation of potential home ranges. Please see the response to Public Concern #165, above, the analysis of effects on black-backed woodpecker on FEIS pages 3-286 through 3-288, and Exhibit Rs-10 (black-backed woodpecker habitat and effects analysis).

**167. Public Concern: There is discussion of how existing roads, the fire, and salvage result in less than optimum elk security areas and reduced hiding cover, but the only conclusion is that there is no concern for species viability across the Forest and larger areas.**

*Response:* There is no concern for population viability for elk at the project scale or at the scale of the Forest or larger scales in western Montana. Exhibit Rb-2 (population information for big game and other commonly hunted species) includes hunting information and Montana Fish, Wildlife and Parks' population estimates for elk in this area.

**168. Public Concern: Pg 3-255 contains the DEIS conclusion that all alternatives would be consistent with regulations and “conserve and protect neotropical migrants.” This conclusion is hard to believe given the analysis for old growth, snags, and riparian habitats that say all action alternatives would result in reduction of habitats.**

*Response:* Please refer to the response to Public Concern # 164, above.

**169. Public Concern: Post-fire reserve areas are indeed very valuable to wildlife resources and Table 2-11 on page 2-39 provides a good comparison among alternatives. Alternative C is clearly the best of the action alternatives although virtually half of the post-fire reserves in Alternative C have had previous regeneration harvest meaning they probably have few or no large trees that actually provide the “legacy.”**

*Response:* Alternative C would provide the best habitat conditions when measured as post-fire reserve areas in terms of acreage, shapes, position on the landscape, and the availability of large trees, as discussed on pages 3-214 and 3-215 and Table 3-64 of the DEIS. The figures were updated for the FEIS (Table 3-74) to account for the revised alternatives and for field information gathered in spring and summer 2008. Approximately 42 percent of FEIS Alternative C's post-fire reserve area would have moderate or better conditions for large snags and trees, which is comparable to the 52 percent of the available landscape in the no action alternative.

We agree the highest quality post-fire reserve areas would be composed of entirely areas with no previous timber harvest. Areas of past regeneration harvest were included in our definition of post-fire reserve areas in order to create as many reserve areas as possible with the understanding they may not be of the highest quality. Most of the regeneration harvests prescribed in the past twenty years left substantial amounts of reserve trees that contribute to the “legacy.” In addition, many of our past regeneration harvests took place over 40 years ago and have many trees (and now snags) that are approaching large tree size and would at least partially contribute to the “legacy.” We also believe fires historically burned in the mosaic pattern that previous regeneration harvests partially mimic.

**170. Public Concern: The environmental affect of actions should be primary for wildlife and bird protection. These are part of the ecological scheme. When you assault them with logging, you assault earth itself. Doesn't anybody ever read about Easter Island where they cut down every tree and then the population vanished. There was no sustainability.**

*Response:* Chapter 1 of the Final EIS identifies several issues related to the protection of wildlife habitat. Chapter 2 contains a heading titled “Features Common to All Action Alternatives” that prescribes many design criteria specific to the protection of wildlife habitat. Chapter 3 contains several sections that address the habitat requirements of wildlife and birds. Each of these sections analyzes the environmental consequences of the management proposals on wildlife habitat.

The Sheppard Creek Post-Fire Project proposed actions detailed in the alternative descriptions in Chapter 2 are consistent with the Flathead National Forest Land and Resource Management Plan (1986). This plan developed a set of goals, objectives, and standards for project planning, such as this project, to ensure national forest resource sustainability.