Myrtle Creek HFRA Project

Substantive Objections and Suggested Remedies
Review and Responses

Introduction
This appendix contains the substantive objections received on the Final EIS (FEIS) for the Myrtle Creek HFRA Project and the agency's responses to those comments. The full text of the objections are part of the public record and are included in the Myrtle Creek HFRA project file located at the Bonners Ferry Ranger Station.

Comments are organized into the following categories:

- **A. Process (including NEPA)**
- **B. Aquatics (with subtopics such as: Roads, Models, Clean Water Act, Fisheries, INFS Buffers, Best Management Practices, and Bull Trout)**
- **C. Fire and Fuels**
- **D. Vegetation**
- **E. Old Growth**
- **F. Climate**
- **G. Soils**
- **H. Roadless Areas**
- **I. Wildlife**
- **J. Economics**
- **K. Openings**
- **L. Weeds**
- **M. Cumulative Effects**
- **N. Recreation**

A. PROCESS 2
B. AQUATICS 11
C. FIRE and FUELS 57
D. VEGETATION 100
E. OLD GROWTH 104
F. CLIMATE 111
G. SOILS 113
H. INVENTORIED ROADLESS AREAS (IRA) 127
I. WILDLIFE 137
J. ECONOMICS 148
K. OPENINGS 149
L. WEEDS 153
M. CUMULATIVE EFFECTS 155
N. RECREATION 160

A. Process

Objector: The Lands Council, Wild West Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance

Objection Number: 07-01-00-1041

Issue 1. (PROCESS) (page 6) Violation of National Environmental Policy Act (NEPA)

Federal agencies shall to the fullest extent possible encourage and facilitate public involvement in decisions which affect the quality of the human environment.

NEPA procedures must ensure that information is available to public officials ***and citizens*** *(emphasis included) before decisions are made and actions are taken. NEPA requires disclosure of information necessary to determine compliance with legal requirements such as the ESA, CWA, NFMA, and applicable Forest Plan Standards and Guidelines.*

Suggested Remedy: *Improve upon the collaborative process, as to avoid a scenario in which multiple environmental organizations in the area must litigate in order for the Agency to comply with the IPNF Forest Plan, NEPA, Roadless Area Conservation Rule, Appeals Reform Act, HFRA, EAS, E.O. 13186, NFMA, the U.S. Constitution, the CWA, and APA. (from page 65)*

Response: The objectors provide previous comments (both positive and critical) regarding the collaboration process and public involvement for this project. See paragraphs 5 through 7 below.

The FEIS clearly describes the lengthy collaborative public involvement for this project (FEIS, pages 2-1 through 2-4). The first public meeting was held in July, 2004; the collaboration approach for the project was explained at the meeting. Notes from that meeting summarizing the group comments included: "This type of KVRI[1] work benefits the communities and allows input to policies. People in KVRI might not always agree but at least everyone is present and heard. Having input to Forest Service actions is always good. Having input before the outcome is always good." There is no notation of disagreement with the collaboration process that was presented.

Over the next two years there were six additional public meetings and two public field trips to the project area. Each meeting and field trip was identified as Myrtle Creek Working Group meetings/trips, was open to all members of the public, and was advertised in the local newspapers. Attendance records for those meetings show that the following organizations were represented: The Lands Council, Selkirk Conservation Alliance, and Alliance for the Wild Rockies (some attendees may have represented more than one organization). General notes of discussions were taken and provided to attendees and other interested parties following each meeting.

Notice of the proposed project was published in the IPNFs' Schedule of Proposed Actions in February, 2005 and copies were mailed to the Forest-wide SOPA mailing list. A letter with additional information was sent to 54 contacts on the Bonners Ferry Ranger District project mailing list. The mailing list includes each of these organizations. A Notice of Intent to prepare an Environmental Impact Statement (EIS) for the project was published in the Federal Register on May 31, 2005.

The Draft EIS was released in May 2006. Copies were mailed to 30 parties on the mailing list and 28 letters were sent to others to notify them of its availability. The DEIS was also posted on the IPNFs' website. Legal notice was published in the newspaper of record and in the Federal Register, starting the comment period on May 19, 2006.

In the letter of comments on the DEIS submitted jointly by the Selkirk Conservation Alliance and Alliance for the Wild Rockies (7/3/06, signed by Liz Sedler), it states, "The Kootenai Valley Resource Initiative (KVRI) Myrtle Creek working

[1] KVRI – Kootenai Valley Resource Initiative, formed in 2001 under a Joint Powers Agreement by the Kootenai Tribe of Idaho, Commissioners of Boundary County, Idaho, and the City of Bonners Ferry, Idaho. KVRI forms sub-committee "Working Groups" to provide a forum for public collaboration on resource issues important to KVRI and the community. The working groups forward recommendations to the 11-member KVRI Board, who then take the appropriate action with the affected or interested agencies or members of the public.

group provided a forum for community and public participation in discussions with the Forest Service regarding the fuel reduction goals for the Myrtle Creek watershed and how they might be achieved. The goal in the DEIS is echoed in the goals for the Myrtle Creek watershed developed via the KVRI collaboration process."

The letter of comments on the DEIS submitted jointly by the Idaho Conservation League and The Wilderness Society (6/30/06, signed by John Robison and Brad Brooks), states, "We do appreciate the willingness on the part of the IPNF to design some of the goals of this project through the collaboration process through the Kootenai Valley Resource Initiative, and we appreciate being involved in this process. At the same time… we question the degree of participation… specifically with regards to road management and roadless logging. We strongly encourage you … do not issue a decision or pre-decisional notice at the time the FEIS is released."

Comment letters from the Wild West Institute (jointly with the Alliance for the Wild Rockies, Selkirk Conservation Alliance, Kootenai Environmental Alliance, and The Lands Council; 7/2/06, signed by Jeff Juel), and the Kootenai Environmental Alliance (6/30/06, signed by Mike Mihelich) did not include comments regarding the collaborative process.

Issue 1-A. (PROCESS) (page 6)

"the…Proposed Action cannot meet the Purpose and Need…"
A principal basis for the activities… is the protection and improvement of the Myrtle Creek watershed to maintain the source of high quality drinking water for the City of Bonners Ferry. The FEIS claims that without action these resources are in danger, and that the activities proposed will improve the water quantity and quality.

Suggested Remedy: *The Agency should propose an overall watershed restoration project which would do the following:*

a. *Assist the City of Bonners Ferry in doing fuel reduction in areas supported by Jack D. Cohen, regarding Defensible Space.*
b. *Ban all new road reconstruction, commercial logging, mining, grazing, off-highway vehicle (OHV), and herbicide use across the entire watershed top protect the municipal water supply.*
c. *Ban any and all logging in roadless areas greater than 1000 acres.*
d. *Ban all mechanical treatment in old growth areas.*
e. *Decommission all roads prioritized within the FEIS for decommissioning.*
f. *Gather adequate forest wide population and population trend data for MIS, and analyze past, current, and future impacts to these species.*
g. *Work with state and private land owners to assist and promote the regulations established to protect this area.*
h. *Improve the collaboration process (see Issue 1 above).*

Response: The Purpose and Need for this project are described in section 1.2 of the FEIS and were thoroughly discussed during the public meetings of the Myrtle Creek Working Group (project file KVRI Meeting Notes). The KVRI - Myrtle Creek Working Group goals and collaborative development of the Proposed Action are discussed in sections 2.3 and 2.3-A of the FEIS. The existing conditions of the resources are thoroughly described in Chapter 3 of the FEIS. The effects of the Preferred Alternative, No Action, and Alternative 5 are described in Chapter 4 and summarized in Chapter 2 of the FEIS.

Response to specific items listed in the suggested remedy:

a. *Assist the City of Bonners Ferry in doing fuel reduction in areas supported by Jack D. Cohen, regarding Defensible Space.*

Response - Figure 1.1 in the FEIS (FEIS, page 1-2) shows the general relationship of the project area to the City of Bonners Ferry, which is generally more than four miles from the City of Bonners Ferry. Most of the private land within the project area is industrial forest land; the only homes and other structures are located on private lands along the Westside Road - east of the project area. The headquarters of the Kootenai Wildlife Refuge (also east of the project areas) includes several structures including the office and storage buildings. The Boundary County Idaho Wildland/Urban Interface Fire Mitigation Plan (Boundary County, 2003) describes the Mitigation Plan, and the work to be performed by priority. The first priority is the identified demonstration projects; the second priority is the "periphery and wildland inclusions of [the] City of Bonners Ferry," (Boundary County, 2003, p. 11-16). Cohen is not cited because no structure protection is proposed as part of the project activities.

b. *Ban all new road reconstruction, commercial logging, mining, grazing, off-highway vehicle (OHV), and herbicide use across the entire watershed to protect the municipal water supply.*

Response - Roads - Throughout the collaboration meetings of the Myrtle Creek Working Group, discussions and presentations covered construction of new roads, needs for road reconstruction, and road management design criteria that would be part of the project. The construction of new (temporary) roads was presented, discussed, and considered as part of Alternative 3. The Working Group recommended this alternative be eliminated from further consideration (FEIS, pages 2-9 and 2-10). Also see Road Management Features, FEIS page 2-12; Road Reconstruction and Maintenance, FEIS page 2-23; Features Designed to Protect Water, Soils, and Aquatic Habitat, FEIS pages 2-23 through 2-26; and KVRI Meeting Notes located in the project file.

Commercial Logging – The collaborative working group did discuss treatment options for areas of old growth. Following a field trip to the Snow Creek area, members of the Selkirk Conservation Alliance and The Lands Council opposed commercial logging in these stands and suggested using fire alone to restore old growth stand composition and structure. This was analyzed as Alternative 4 in the FEIS. At the end of the June 30, 2005 collaboration meeting, all but two members of the Myrtle Creek Working Group agreed by consensus to go ahead with the Proposed Action – Alternative 2, which uses commercial logging followed with prescribed burning to reduce fuels in the two old growth stands, with a total of approximately 2086 acres of commercial logging. (FEIS, pages 2-10, 2-11; KVRI meeting notes for June 30, 2005.)

Mining – There are no mining claims in the project area.

Grazing – There are no grazing allotments in the project area.

OHV use – Under the current IPNF Travel Plan, within the Myrtle Creek watershed off-road or off-trail use by vehicles, ATVs, and motorcycles is prohibited from April 1 through November 15 of each year. The FEIS states that there will be no changes to the type of recreation provided *or anticipated* (emphasis added) (FEIS, page 4-98).

Herbicide Use – The project will comply with the Bonners Ferry Noxious Weed Control Final EIS and Record of Decision, including the criteria for use of herbicides in the project area; all herbicide applications must follow regulations printed on the labeling concerning their use. (FEIS section 2.9-g pages 2-22 and 2-23.) The project will be consistent with the requirements of the Clean Water Act and Safe Drinking Water Act. Source water protection was included in the design of the monitoring plans. (FEIS, page 4-42.)

c. Ban any and all logging in roadless areas greater than 1000 acres.

Response Activities in roadless areas were discussed during numerous Myrtle Creek Working Group meetings (KVRI Meeting Notes).

The FEIS explains the need for fuels treatments within Inventoried Roadless Areas (FEIS section 4.6-A, page 4-87). The FEIS also analyzed Alternative 1 (No Action) and Alternative 5, neither of which included any activities in Inventoried Roadless Areas (IRAs). As stated earlier, at the end of the June 30, 2005 collaboration meeting, all but two members of the Myrtle Creek Working Group agreed by consensus to go ahead with the Proposed Action – Alternative 2. Alternative 2 includes silvicultural/fuels reduction treatments in IRAs in order to maintain or restore desirable characteristics of ecosystem composition and structure to reduce the risk of unwanted uncharacteristic wildfire effects. The project complies with the 2001 Roadless Area Conservation Rule. (FEIS, page 4-87)

Effects on the Kootenai Peak and Selkirk IRAs are disclosed in the FEIS (FEIS, pages 4-91 through 4-97). Figure 4.11 (FEIS, page 4-91) displays a photo taken in 1935, which shows the area burned by a wildfire in 1926 and the resulting mosaic of openings, and areas where the fire burned brush and smaller trees but left the larger trees. The photo has been overlain with the boundaries of the IRAs and the proposed treatment units. It is obvious from this figure and Figures 4-14, 4-15, 4-16, and 4-18 that the proposed treatments will be within the range of natural variability that would be expected to occur under natural disturbance regimes on a landscape scale, as required by the 2001 Roadless Rule (FEIS pages 4-87, 4-95, and 4-96).

d. Ban all mechanical treatments in old growth areas

Response The FEIS analyzed Alternative 4, which was designed to recognize the collaboration group's recommendation to evaluate potential fuels reduction methods, other than the use of timber harvest equipment, that could meet the both old growth stand attributes **and** the hazardous fuel reduction objectives of this project in two areas within the Snow Creek watershed (approximately 83 acres of allocated dry forest old growth and approximately 159 acres of potential dry forest old growth). Alternative 4 included the use of prescribed fire to treat the fuels; one method utilized only prescribed burning without any prior site preparation. Analysis showed that to be effective, this method would have to be conducted

under weather and fuel conditions that would result in a high risk of an escaped fire in close proximity to private lands. As explained in the FEIS, this alternative was dropped from further consideration (FEIS, page 2-10 and 2-11).

e. Decommission all roads prioritized within the FEIS for decommissioning

Response The road decommission priority rankings merely served to prioritize roads (based on erosion risk ratings) for decommissioning as limited funds become available (Aquatics Map 5, FEIS Map Appendix page 5).

It is also important to note that a number of the high erosion risk roads listed in the Myrtle HFRA FEIS Table 4.1 (p. 4-7) are on private property (Forest Capital Partners, LLC), and some of the roads solely on USFS-administered property provide the only access route to private lands. The Forest Service cannot legally authorize road decommissioning/obliteration on private lands. Similarly, Forest Service plans to decommission roads providing reasonable access to private inholdings would likely be successfully challenged in court under the Alaska National Interest Lands Conservation Act (ANILCA). Therefore, these roads were not considered for decommissioning in either the Myrtle-Cascade or Myrtle HFRA analyses.

Regarding the previous Myrtle-Cascade project, with the exception of the ¼ mile of temporary road, none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37). The district will continue to look for decommissioning opportunities as funding becomes available. At least 12 miles of roads are expected to be decommissioned in 2007, including portions of Road 633-E.

f. Gather adequate forest wide population and population trend data for MIS, and analyze past, current, and future impacts to these species.

Response: Refer to the Wildlife section of this Appendix.

g. Work with state and private land owners to assist and promote the regulations established to protect this area.

The Idaho Forest Practices Act regulates forest practices on all land ownerships in the State of Idaho (FEIS, page 3-5). The Northern Region of the Forest Service provides programs to land owners through its division of State and Private Forestry; more information on available programs is available on the Region's website at http://www.fs.fed.us/r1-r4/spf/index.html.

Issue IV. (PROCESS) Violation of National Forest Management Act (NFMA) (page 45)

The Healthy Forest Restoration Act (HFRA; Pub.L. 108-148, section 2, December 3, 2003, 117 Stat. 1888) provided the authority for the Myrtle Creek HFRA project and is binding as a U.S. statute. Several provisions of the HFRA will be violated if the project is to proceed as described in the FEIS.

Suggested Remedy: *None.*

Response: Although the Objectors' heading listed NFMA, the discussion includes only the Healthy Forest Restoration Act, so that is the law addressed by this response. From the FEIS pg. 1-7,

The Healthy Forests Restoration Act (HFRA) was passed in December 2003. It provides improved statutory processes for hazardous-fuel reduction project on certain types of at-risk National Forest System lands and also provides other authorities and direction to help reduce hazardous fuel and restore healthy forest and rangeland conditions. The act also provides expedited environmental analysis of HFRA projects and provides administrative review through an Objection process *before* decisions are issued. (USDA 2004)

As part of the Healthy Forests Initiative for Wildfire Prevention and Stronger Communities of 2002, the President directed the Council on Environmental Quality to develop guidance to ensure consistent procedures under NEPA for fuels reduction and fire-adapted ecosystem restoration projects. This EIS follows the CEQ description of core elements of the process and documentation outline. (CEQ memo, 12/9/02)

Issue IV – A. (PROCESS) Annual Program of Work (objection page 45)

There is no Annual Program of Work contained in or even referenced in the FEIS as was requested by the Objectors in scoping comments.

Suggested Remedy: *None.*

Response: The Myrtle Creek HFRA project is high priority because it implements what Congress intended under Section 103 of the Act – Prioritization, which states priority shall be given to authorized hazardous fuel reduction projects that provide for the protection of at-risk communities *or watersheds* (emphasis added) or that implement community wildfire protection plans. The Boundary County Community Wildfire Protection Plan identified Myrtle Creek (the municipal water source for the City of Bonners Ferry) as part of the at-risk community infrastructure for Boundary County, Idaho (FEIS, page 2-5). The project is also consistent with the 10-Year Comprehensive Strategy (FEIS, page 3-30) and National Fire Plan (FEIS, pages 1-7 and 3-30). The Myrtle Cascade EIS has units included the in the Bonners Ferry 5-year Fuels Plan.

Issue IV – B. (PROCESS) Suitable Lands (objection page 45)

The FEIS fails to provide documentation supporting the suitability under HFRA or as defined in the Federal Register for each of the 2080 acres proposed for treatments in the project area.

Suggested Remedy: *None.*

Response: The Boundary County Community Wildfire Protection Plan identified Myrtle Creek (the municipal water source for the City of Bonners Ferry) as part of the at-risk community infrastructure for Boundary County, Idaho (FEIS, page 2-5). Lands in the Snow Creek drainage meet the requirements for lands in Condition Class 3 in all fire regimes and in Condition Class 2 in Fire Regimes I, II, or III that are, "… in such proximity to a municipal water supply system or a stream feeding such a system within a municipal watershed that a significant risk exists that a fire disturbance event would have adverse effects on the water quality of the municipal water supply or the maintenance of the system, including a risk to water quality posed by erosion following such a fire disturbance event." (FEIS, page 3-30). This project is within an "At-risk municipal watershed" as outlined in HFRA (FEIS, page 3-31).

Issue IV – C. (PROCESS) Range of Alternatives (objection page 46)

The FEIS fails to provide adequate supporting documentation for each acre in the project area that prescribes which category of WUI those acres fall into.

There is no information in the FEIS concerning a Defensible Fire Space (DFS) component as it applies to this project and the fire analysis does not address research by Jack D. Cohen regarding Defensible Space.

Suggested Remedy: *None.*

Response: The Boundary County Community Wildfire Protection Plan identified Myrtle Creek (the municipal water source for the City of Bonners Ferry) as part of the at-risk community infrastructure for Boundary County, Idaho (FEIS, page 2-5). Lands in the Snow Creek drainage meet the requirements for lands in Condition Class 3 in all fire regimes and in Condition Class 2 in Fire Regimes I, II, or III that are, "… in such proximity to a municipal water supply system or a stream feeding such a system within a municipal watershed that a significant risk exists that a fire disturbance event would have adverse effects on the water quality of the municipal water supply or the maintenance of the system, including a risk to water quality posed by erosion following such a fire disturbance event." (FEIS, page 3-30). This project is within an "At-risk municipal watershed" as outlined in HFRA (FEIS, page 3-31).
Defensible Fire Space refers to the space around a structure that could be "defended" by fire suppression resources. Due to the land ownerships and land use patterns within the project area, structure protection was not recognized as an issue for this project and therefore, is not proposed as part of the project activities. Cohen is not cited because no structure protection is proposed as part of the project activities.
The Forest Service considered five alternatives, including No Action. Alternatives 3 and 4 were considered but eliminated from further study for reasons stated in the FEIS (FEIS, pages 2-9 through 2-11). Alternative 1 (No Action), Alternative 2 (Proposed and Preferred Alternative), and Alternative 5 were considered and analyzed in detail, as documented throughout the FEIS.

Issue V. (PROCESS) Violation of the U.S. Constitution (objection page 63)
HFRA, including its section 106 restrictions on judicial review violates the U.S. Constitution, and its separation of powers.
Suggested Remedy: *None.*

Response: We disagree with this opinion. The objectors also appear to disagree within their own objections. Note that in Issue IV the Objectors stated, *"The Healthy Forest Restoration Act (HFRA; Pub.L. 108-148, section 2, December 3, 2003,*

117 Stat. 1888) provided the authority for the Myrtle Creek HFRA project and ***is binding as a U.S. statute****."* (emphasis added).

Issue VI. (PROCESS) Violation of the Appeals Reform Act (ARA) (objection pages 63-64)
The appeal procedure under HFRA imposes an unfair and arbitrary burden on appellants by prohibiting them from raising issues that they did not raise in their comments on the proposed action (section 215.15(b)(5)). This standing limitation appears to violate the ARA.
HFRA regulations eliminate the opportunity for non-appellants to provide input, attend settlement meetings, or otherwise participate in the appeal process.

Suggested Remedy: *Allow citizens to appeal new issues that arise from changes in the proposed action or environmental analysis.*

Response: We disagree with this opinion. All meetings held during the Administrative Review process are open to the public (HFI, HFRA Interim Field Guide, page 29).

Issue VII. (PROCESS) Violation of the Administrative Procedures Act (APA) (objection page 64)
Failures to comply with the Forest Plan, the NFMA, the MBTA and E.O. 13186, HFRA, the US Constitution, and NEPA by implementing the proposed action as is would all be in violation of the APA because that decision would be arbitrary, capricious, or otherwise not in accordance with the law.

Suggested Remedy: *The use of different authorities other than HFRA, and the correction of all legal deficiencies of the Myrtle Creek FEIS that this Objection identifies.*

Response: We disagree with this opinion.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1. (PROCESS) Violation of NEPA, NFMA, ESA, CWA, State Anti-degradation Policy, IPNF Forest Plan, 2001 Roadless Rule, and other authorities. (page 2)

While we fully support legitimate fuel reduction projects, we have serious questions about the validity and legality of the proposed action in this particular proposal and also have concerns about effects of the project on various resources.

Suggested Remedy: *Reconsider aspects of the project, reassess the impacts, and develop additional alternatives. (objection page 2)*

Response: We disagree with this opinion.

The FEIS clearly outlines the regulatory framework for this project (FEIS, pages 1-6 through 1-9, 3-4 through 3-6, 3-29 through 3-31, 3-64, 3-72, 4-74 through 4-76, 4-89, 4-90, 4-96, 4-97, 4-98) including the Community Wildfire Protection Plan (FEIS, page 2-5). The FEIS thoroughly analyzed the potential impacts of the project as discussed in Chapters 2 and 4 of the document. (Additional information concerning the potential effects of the project are discussed in the responses to other objections throughout this document.)

The Proposed Action and alternatives were developed through thorough and lengthy collaborative public involvement (FEIS, pages 1-6, and 2-1 through 2-4). Members of the Idaho Conservation League were present for the public meetings and field tours of the KVRI Myrtle Creek Working Group (KVRI Meeting Notes, project file).

In response to comments on the Draft EIS and additional analysis, the following changes were made between the Draft and Final EIS: 1) addition of Alternative 5 which was analyzed in detail, 2) changes in fuels treatments in Unit B3, 3) Unit D4 was dropped for hydrologic reasons, 4) Unit F1 was moved slightly, to better treat the fuels above the City of Bonners Ferry's water intake facility, 5) Unit D1 was changed from a seed tree to an irregular shelterwood prescription after analysis showed that in this location a less intensive prescription would still meet the fuels reduction goals, 6) more fuels will be reduced in ephemeral draws within Units G6 and G7, and these units now include more helicopter yarding and less skyline and tractor

yarding in recognition of the soil resource, and 7) Road 2405 was added to the haul route for Alternative 2. Each of these changes was thoroughly analyzed and their effects were disclosed in Chapters 2 and 4 of the FEIS.

Section 104 of the Healthy Forests Restoration Act provides clear direction concerning the use of public collaboration in developing a proposed action and alternatives, including the number of alternatives to "study, develop, and describe". This project and FEIS meet those requirements (FEIS, page 2-9). Two alternatives (Alternatives 3 and 4) were considered, but eliminated from detailed study based in part on recommendations from the KVRI Myrtle Creek Working Group (FEIS, pages 2-10 and 2-11). Three alternatives were considered in detail – Alternative 2 (Proposed Action), Alternative 1 (No Action), and Alternative 5 (in response to public comments on the Draft EIS) (FEIS, pages 2-11 through 2-21 and 2-35 through 2-43, Chapters 3 and 4).

Issue 2. (PROCESS) Limited Discussion Concerning Activities in Roadless Areas (objection page 2)

There was limited discussion on the aspects of the proposal that impact roadless areas, with the exception of the 83 acres within Unit G9. The IPNF has been unable to demonstrate that the other 1,014 acres of roadless logging were addressed through the collaborative process.

Suggested Remedy: *None.*

Response: As described in the previous response concerning alternative development, this project was designed and developed through a lengthy and thorough public collaborative process, including participation by members of the Idaho Conservation League. Meeting notes for the KVRI Myrtle Creek Working Group document the topics of discussions, presentations by Forest Service specialists, and handouts that were provided.

During the January 25, 2005 meeting, the Forest Service presented an initial outline for potential treatment activities. Discussion included high priority treatment areas and potential ways to access the areas – including the possibility of constructing roads in Inventoried Roadless Areas and the pros and cons of doing that. The March 30, 2005 meeting included the Forest Service presentation of Proposal 1, which would utilize existing access and reduce fuels on approximately 2400 acres (some treatment units are located inside Inventoried Roadless Areas, some are outside); and Proposal 2, which would include construction of approximately two miles of temporary roads in IRAs and reduce fuels on approximately 2800 acres (some treatment units are located inside Inventoried Roadless Areas, some are outside). During that meeting, the Working Group concurred that Proposal 1 was preferable. Maps presented at meetings included an overall map of the entire project (showing the Inventoried Roadless Areas and the proposed fuels reduction treatment units), which was presented at the May 17, 2005 Working Group meeting. As the meeting was concluding, the group agreed to move ahead with the project as proposed with the exception of approximately 80 acres of old growth; the old growth discussion was tabled until a field trip could be taken to view the area (KVRI notes, 5/17/05, project file)

At the end of the June 30, 2005 collaboration meeting, all but two members of the Myrtle Creek Working Group agreed by consensus to go ahead with the Proposed Action, identified as Alternative 2 (KVRI Meeting Notes, project file). Alternative 2 does not construct roads in IRAs; it does include silvicultural/fuels reduction treatments in IRAs in order to maintain or restore desirable characteristics of ecosystem composition and structure to reduce the risk of unwanted uncharacteristic wildfire effects. The project complies with the 2001 Roadless Area Conservation Rule. (FEIS, page 4-87) As shown in the meeting notes for the Myrtle Creek Working Group, activities and potential effects within the IRAs were discussed numerous times.

Issue 3. (PROCESS) Violation of NEPA in Terms of Alternative Development (pages. 3 and 9)

The IPNF failed to fully disclose the effects of Alternative #4, which represented a reasonable alternative that would meet the project's purpose and need.

Suggested Remedy: *As a result of the aforementioned issues, we hereby request that:*

1) the proposed action be modified to meet all existing laws and requirements,
2) a Supplemental EIS be issued prior to the issuance of a Record of Decision (ROD),
3) Additional alternatives be explored that would meet the project's purpose and need, and comply with existing environmental laws, and
4) the Chief of the Forest Service approve or disapprove of any roadless logging, as required by Forest Service Manual (FSM) 1925.04a.

Response: As stated in response to Issue 1 (Process), Section 104 of the Healthy Forest Restoration Act provided clear direction on the number of alternatives to "study, develop, and describe". This project and FEIS meet those requirements (FEIS, page 2-9). Two alternatives were considered, but eliminated from detailed study based in part on recommendations from the KVRI Myrtle Creek Working Group (FEIS, pages 2-10 and 2-11). Three alternatives were considered in detail – Alternative 2 (Proposed Action), Alternative 1 (No Action), and Alternative 5 (in response to public comments on the Draft EIS) (FEIS, pages 2-11 through 2-21 and 2-35 through 2-43, Chapters 3 and 4).

Alternative 4 was considered and the FEIS discloses the rationale for not analyzing this alternative in detail. The difference between this alternative and Alternative 2 (Proposed Action) was in the methods used to reduce fuels in two particular areas of dry forest old growth. Alternative 4 looked at two scenarios for the use of prescribed fire to reduce fuels (one without any prior site treatment and a second which included felling - but not removing - unwanted trees prior to prescribed burning). The risks and consequences (further described in Fire Fuels responses) associated with these scenarios were identified and described, including risks to the old growth stand characteristics as well as risk of an escaped fire. At the end of the June 30, 2005 collaboration meeting, all but two members of the Myrtle Creek Working Group agreed by consensus to go ahead with the Proposed Action, which uses commercial logging followed with prescribed burning in the two old growth units described above. Due to the identified risks, and the recommendations of the collaborative group, Alternative 4 was not analyzed further (FEIS, pages 2-16, 2-17).

Permanent road construction is not proposed with this project, so permission from the Chief of the Forest Service is not relevant.

Issue 4. (PROCESS) Project Purpose and Need (page 13)

Because the Myrtle Creek Projects fails to carry out the necessary restoration, and because the project will threaten water quality in the stream, we feel that the project does not adequately address the project's purpose and need as currently designed.

Suggested Remedy: *None.*

Response: The Purpose and Need for this project are described in section 1.2 of the FEIS and were thoroughly discussed during the public meetings of the Myrtle Creek Working Group (project file KVRI Meeting Notes). The KVRI - Myrtle Creek Working Group goals and collaborative development of the Proposed Action are discussed in sections 2.3 and 2.3-A of the FEIS. The existing conditions of the resources are thoroughly described in Chapter 3 of the FEIS. The effects of the Preferred Alternative, No Action, and Alternative 5 are described in Chapter 4 and summarized in Chapter 2 of the FEIS.

The first part of the stated goals for the project is to: "Maintain Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry." (FEIS page 1-1) The FEIS thoroughly analyzed potential effects of the No Action alternative as well as the Proposed Action and other alternatives and concluded that with implementation of Alternative 2 in Myrtle and Snow Creeks, existing risks to water quality / beneficial uses would be decreased and sediment concerns associated with at-risk culverts and roads would be reduced (FEIS, page 4-34). The Idaho Department of Environmental Quality participated in the Working Group; as stated in their letter to the Forest, "Because DEQ has been very concerned about this drinking water supply after the 2003 wildfire, we have participated in meetings and site visits to insure that proposed activities do not further impair water quality." (DEQ letter 8/23/06, Project File) Analysis concluded that although the short-term effects of Alternative 2 on the overall aquatic trend in Myrtle Creek would be slightly negative, the long-term effect is a high degree of positive benefits, while Alternatives 1 (No Action) and 5 would be have negative impacts in the long-term (Table 4.25, FEIS page 4-38).

The second part of the stated goals is to: "Reduce hazardous fuels in the Myrtle Creek watershed and adjacent forests." (FEIS page 1-1) The FEIS thoroughly analyzed potential effects of the No Action alternative as well as the Proposed Action and other alternatives, and concluded that implementation of Alternative 2 in Myrtle and Snow Creeks, does the most to meet this portion of the goal. As shown in the FEIS (Table 2.13, page 2-39), Alternative 2 improves Condition Class and changes Fuel Models to a more desirable type on the most acres; changes the predicted fire type (crown fire or surface fire) on the most acres; and creates conditions favorable to direct attack by hand crews with high production rates, and changes predicted fire severity from a current rating of Moderate-High to a rating of Low - all on the most acres.

The third part of the stated goals is to: "Trend vegetation in Myrtle Creek watershed and adjacent forest towards conditions that would be less susceptible to catastrophic fire, while maintaining and restoring habitat for fish and wildlife species." (FEIS, page 1-1) As shown above, the Proposed Action (Alternative 2) meets the fuels reduction goals and objectives. Appendix B of the FEIS discloses the analysis and potential effects to fish and wildlife habitat.

The rationale for and identification of wildlife species analyzed in detail is included (FEIS, pages B-3 through B-12). The following species were analyzed in detail: Canada lynx, grizzly bear, black-backed woodpecker, northern goshawk, fisher, and pileated woodpecker (Table B.7, FEIS page B-13). Analysis issue indicators were described (Table B.8, FEIS page B-14). The proposed action meets the stated purpose and need to "maintain and improve wildlife habitat" based on the increased number of acres that will contain structural conditions preferred by flammulated owls in treated vs untreated stands. In short, most acres of dry site old growth in the project area are currently unsuitable flammulated owl nesting and foraging habitat due to excessive stem density in the understory, and continue to trend away from suitability (FEIS pp. B-10, B-26 – B-27). No flammulated owl presence was documented during surveys of several of the proposed dry-site treatment areas (project file document myrtle_snow_flow_surveys.pdf). The risk of wildfire, and the likelihood that this fire would be stand-replacing in these stands, increases yearly. Mechanical treatment represents a relatively low level of risk to continued viability of this species (due to disturbance during implementation and some snag loss), but would result in increased habitat quality and quantity over time. Without management intervention, these stands are very likely to remain in unsuitable condition for flammulated owls until a stand-replacing event sets the development back at least 150 years.

The fisheries discussion (FEIS, pages B-40 through B-62) also identifies analysis methods, the rationale for and identification of species analyzed in detail (FEIS, page B-42) and the analysis issue indicators (FEIS, page B-48).

Issue 5. (PROCESS) *The FEIS also maintains that logging in roadless areas is not an irreversible commitment of resources. The FEIS is not in accordance with past legal rulings that were specific to this issue. (objection page 16)*

Suggested Remedy: *1) Include site-specific statements of the environmental consequences that a non-wilderness management would have on the roadless area. 2) Discuss mitigation measures to avoid or minimize the impact or loss of wilderness characteristics. 3) Develop and analyze an adequate range of wilderness and non-wilderness alternatives.*

Response: Due in part to comments received on the DEIS, the discussion of Roadless Areas was moved from the appendices of the DEIS into the main body of the FEIS (FEIS, pages 3-72 through 3-81, 4-87 through 4-97) and the discussion of irreversible and irretrievable commitment of resources was reconsidered and rewritten and includes a discussion on Scenic Resources, Roadless Areas and Recreation as well as discussion of the Potential for Future Wilderness Designation (FEIS, pages 4-101, 4-102).

The Myrtle Creek HFRA project does not propose any management activities within designated wilderness areas. Management Area Map 1- Forest Plan Management Areas (FEIS Map Appendix page 13) clearly shows the two Inventoried Roadless Areas in the vicinity of this project – Selkirk IRA #125, and Kootenai Peak IRA #126 – as well as the Forest Plan Management Areas in the project analysis area. It is obvious from the map, that the treatment units are approximately five miles from the closest lands with a Proposed Wilderness management direction (MA 11), which are located in the central-west portion of the Selkirk IRA.

The existing conditions of the IRAs are described in the FEIS (FEIS pages 3-78 through 3-80). Kootenai Peak IRA currently includes approximately 4844 acres, as reported in the Draft Comprehensive Evaluation Report prepared by the Idaho Panhandle National Forests in May, 2006 (less than the 5,000 acre standard for a Congressional wilderness designation). Since the late 1980s, some development has occurred within this roadless area including timber sales conducted under the analysis of the Curve Creek and Snow Creek Environmental Analyses and Decision Notices, and the Myrtle-Cascade FEIS and Record of Decision. Myrtle Creek Road #633 serves as the northern boundary of the IRA and Snow Creek Road #402 serves as the major portion of the southern boundary.

The FEIS focused on the Cascade stringer portion (approximately 8,772 acres) of the much larger Selkirk IRA (approximately 97,957 acres total). The FEIS states that over time the natural integrity of the area has been diminished by fire suppression, which has resulted in conditions that have reduced resilience to disturbance. In 1926 a wildfire burned into the Adverse Creek part of the area and the 2003 Myrtle Creek Fire burned into the roadless area between Yellow Pine and Adverse Creeks. Access to the southern edge of the Cascade stringer is by the Myrtle Creek Road #633, which serves as a portion of the boundary of the IRA. (FEIS, pages 3-79 and 3-80 and Figure 4.24, page 3-81)

The FEIS describes the need for fuels treatments within the IRAs (FEIS, pages 4-87 and 4-88) and describes the types of treatments and treatment objectives in a very specific unit-by-unit manner. For example, Units B1, B3, B4 B5, B6, D1, D6, D9 and E3 will be treated with irregular shelterwood cuts that are designed to approximate regeneration processes that occurred through natural disturbances. In the long term, developing these types of stands would restore the desirable characteristics of ecosystem composition and structure, and reduce the risk of uncharacteristic wildfire effects. Figures 4-13 and 4-14 were provided to show a representative example of the appearance of a stand following an irregular shelterwood cut

(FEIS, pages 4-94, 4-95). Commercial thinning and group selection cuts are described in the same fashion with supporting photographs.

The analysis methodologies described in the FEIS (page 4-90) clearly show that direction in the 2001 Roadless Area Conservation Rule (Roadless Rule) and the Forest Service Handbook were followed. Evaluation was conducted and disclosed for both "Wilderness Attributes" (Forest Service Handbook 1909.12) and "Roadless Characteristics" (Roadless Rule). Effects are described in the FEIS (pages 4-92 through 4-94), including specific treatment unit-by-unit effects. For example, "Units E3, E8 and F1 are n the north side of Snow Ridge, between the ridge and portions of the Myrtle Creek drainage burned by the 2003 Myrtle Creek Fire. Unit E3's entire southern boundary is along Road 2190. [Following treatment] this unit will also appear more open and park-like with a canopy that is 20 to 50% lighter than adjacent untreated areas. Unit E8 will be less open than E3… Along the northern portion of this unit (Unit F1), the area might be perceived as having a more natural appearance because of its closeness to the area burned by the [2003] wildfire. The proposed management activities (Alternative 2) will have no effects on Manageability of the IRAs (FEIS, page 4094, item f).

The proposed action is consistent with the Forest Plan and the 2001 Roadless Area Conservation Rule (FEIS pages 4-96, 4-97).

Alternative 5 and Alternative 1 (No Action) were both analyzed in detail and provided two alternatives that did not include treatment in either of the IRAs (Figure 2.2 - Alternative 5 Map, FEIS page 2-19).

Issue 6. (PROCESS) Incomplete Freedom of Information Act (FOIA) response (objection page 20)

The FEIS references Assessment Unit Status Reports for TMDL Assessment Units. These reports were not included in the FOIA response for project file information.

Suggested Remedy: *None*

Response: The FOIA request received during the objection period did not make a specific request for these documents. They are available on-line from the Idaho Department of Environmental Quality's website.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

B. Aquatics

Water Quality:

Issue 1. "We are concerned that the project, as defined, fails to adequately consider the need for watershed rehabilitation and watershed protection within the project area…..the project only proposes to decommission one mile of road, will result in increased sediment, and threatens to impede future efforts to restore the watershed." (Page 11 and 12)

Objector's Suggested Remedy: None

Response: We will be employing stewardship projects in order to complete restoration work in the Myrtle and Snow Creek watersheds (FEIS Chapter 4: pgs. 4-9 to 4-10). Other planned restoration activities not described in the Myrtle HFRA were covered under the Myrtle Cascade FEIS. There is no need to reanalyze the roads that were already analyzed in the Myrtle Cascade FEIS. The project does not propose to only decommission 1 mile of road. The Myrtle HFRA FEIS is analyzing that one mile of road that was not originally covered in the Myrtle Cascade FEIS. We received RAC funds in 2006/2007 and are using appropriated dollars (FEIS Chapter 4: pg. 4.2) to decommission approximately 15.5 miles of road, restore fish passage, and improve culverts in 2007 (Hydrology Project Files). Other road decommissioning work covered under the Myrtle Cascade project will continue, following the implementation of Myrtle HFRA project.

The FEIS clearly states that any increases will be immediate short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H); and the effects would not be detrimental nor permanent. The FEIS also states that

the potential for sediment delivery will be further reduced through the implementation of BMPs and other mitigation measures (FEIS Chapter 4: pgs. 4-1 to 4-43). The FEIS states that there will be no net increase in sediment to the watersheds.

The objector's opinion that this project "threatens to impede future efforts to restore the watershed" is an unsubstantiated opinion.

Issue 2. "We are also concerned that, while the project recognizes the need to decommission roads to maintain water quality, necessary restoration work will not be accomplished." (Page 12)

Objector's Suggested Remedy: None

Response: This is an unsubstantiated opinion. The objector also fails to identify what the "necessary restoration work" is. As stated above in response to Issue 1, we will be employing stewardship projects in order to complete restoration work in the Myrtle and Snow Creek watersheds (FEIS Chapter 4: pgs. 4-9 to 4-10). Other planned restoration activities not described in the Myrtle HFRA were covered under the Myrtle Cascade FEIS. There is no need to reanalyze the roads that were already analyzed in the Myrtle Cascade FEIS. The project does not propose to only decommission 1 mile of road. The Myrtle HFRA FEIS is analyzing that one mile of road that was not originally covered in the Myrtle Cascade FEIS. We received RAC funds in 2006/2007 and are using appropriated dollars (FEIS Chapter 4: pg. 4.2) to decommission approximately 15.5 miles of road, restore fish passage, and improve culverts in 2007 (Hydrology Project Files). Other road decommissioning work covered under the Myrtle Cascade project will continue, following the implementation of Myrtle HFRA project.

Issue 3. "It appears, from project file documents, that the FEIS is attempting to "take credit" for road obliteration that was already authorized under the Myrtle-Cascade ROD but has not been completed, even though the finding was supposed to have been guaranteed." (Page 12)

Objector's Suggested Remedy: None

Response: The Myrtle-Cascade ROD authorized obliteration of 36.1 miles of roads within the project area, along with approximately ¼ mile of temporary road obliteration. The temporary road was constructed as an extension of the 633C/633E ("Jump-up") road, and was to be obliterated by the purchaser following harvest. Portions of the Mama Cascade sale requiring this road segment were not yet harvested at the time of the fire and subsequent decision to salvage fire-killed timber from 226 acres. As a result, the Myrtle-Cascade EIS 18.1 Review of New Information and Changed Conditions (10/22/2003) moved this road obliteration responsibility from the purchaser to the District so that it would be available for reforestation activities. A separate decision authorized the placement of a Snotel site along the 633C, retention of the bottom 0.4 miles to facilitate construction and subsequent maintenance of the site, and placement of a gate to block public access to the road. Accordingly, a total of 35.7 miles of previously existing road were slated for removal.

With the exception of the ¼ mile of temporary road, none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37). Thus, the funding was not guaranteed. The District will continue to look for decommissioning opportunities as funding becomes available. Approximately 15.5 miles of roads are expected to be decommissioned in 2007 using RAC and appropriated funds (Project File). The district will actively pursue road-decommissioning activities following the implementation of Myrtle HFRA.

The FEIS is not attempting to "take credit" for road obliteration that has not been completed, it is not necessary for the FEIS to reanalyze for reauthorization the decommissioning of roads that have already been analyzed and authorized.

Issue 4. "Although the FEIS states that these standards will be met, we question how these increases will be avoided when the FEIS also admits that the project will result in increased levels of sediment." (Page 12)

Objector's Suggested Remedy: None

Response: Although it is anticipated that there may be some delivery of sediment to streams associated with the proposed action, the cumulative effect of the roads decommissioning (15.5 miles) currently under contract, and other proposed restoration activities to be accomplished through the timber sale and with Stewardship contracting (FEIS pgs.) would result in a net reduction in sediment.

Through the implementation of INFS, riparian habitat conservation areas (RHCAs) were established along all streams to preserve the integrity of those riparian habitats and the services they provide aquatic ecosystems. The riparian management objectives outlined in INFS is to provide sufficient vegetation in riparian areas to shade the channel and regulate stream

temperatures. The proposed action does not include any timber harvesting, road building, or any other activity that would decrease shade to the channel or increase stream temperatures.

These sediment offsetting activities and implementation of INFS for temperature preservation were discussed with the Regional Hydrologist who discussed them with DEQ/EPA and were considered to be consistent with State water quality standards, the Clean Water Act, and to meet the intent of the TMDL.

The estimated sediment contributions from roads was analyzed as a worst case scenario that assumed that all hauling would occur during unacceptable wet, muddy conditions for the entire year on sediment contributing portions of all haul routes. This was done to estimate the worst-case scenario. This in no way reflects operating procedures. Although hauling might occur during unacceptable conditions for short time periods, monitoring would identify poor conditions (likely within hours, certainly within a day). Monitoring would occur most every day by Sale Administrators and/or specialists and would identify poor conditions and shut down hauling when poor conditions occurred. In addition specific BMPs and mitigation measures will be adhered to so as to help further reduce the potential for effects from these activities (FEIS Appendix C: pgs. C-1 to C-12).

By following the regulatory framework listed in FEIS 3.2-C: pgs 3-4 to 3-6 (NFMA, IPNF Forest Plan, CWA, State of Idaho's implementation of the CWA, Rules pertaining to the Idaho Forest Practices Act, IDAPA 37.03.07, EO 11988, EO 11990, the Safe Drinking Water Act, and BMPs) mitigation associated with the project would also help meet the intent of the TMDL and CWA.

The FEIS explained, in great detail, the TMDL process (FEIS 3.2-B, Appendix D.2). As explained, the IPNF was involved in the process. A Kootenai River Subbasin Assessment and development of TMDLs has been conducted through a joint effort of the Idaho Department of Environmental Quality (IDEQ), the Environmental Protection Agency (EPA), and the Kootenai Tribe of Idaho (IDEQ, et. al. 2005). The IPNF participated in the process with technical input and representation on the Kootenai Valley Resource Initiative (KVRI) TMDL Working Group.

The water quality does meet DEQ and EPA standards for drinking water and the City of Bonners Ferry monitors this (DEIS section 3.3-A.15 and FEIS Chapter 3, section 3.3). The Bonners Ferry Ranger District did not conduct water quality sediment sampling, as stated in FEIS 3.2-D.5. The functioning status of the streams and their morphology is monitored. It is from this data and status support of beneficial uses, that the water quality can be inferred. Past activities have caused sediment deposits and stream bank erosion in certain sections of Snow Creek, Myrtle Creek, and their tributaries. (DEIS sections 3.3-A.8, 3.3-A.20 and FEIS Chapters 3, 4, and Appendix D). Much of this is site specific, though, and overall these creeks have been stable enough to have withstood these past management actions without permanently adversely affecting water quality. With the bedrock and boulder content on several of the reaches surveyed, streambed stability is fair to good (DEIS 3.3-A.14, 3.3-A.20, and FEIS Chapters 3 and 4 and Appendix D).

Issue 5. "The FEIS admits, '[t]here would be an immediate short-term increase in sediment,' yet relies upon prospective reductions in sediment that may or may not receive future funding, and may or may not be authorized in the future". (Page 12)

Objector's Suggested Remedy: None

Response: The Bonners Ferry Ranger District received RAC funds in 2006/2007 and are using appropriated dollars (FEIS Chapter 4: pg. 4.2) to decommission approximately 15.5 miles of road, restore fish passage, and improve culverts in 2007 (Hydrology Project Files). Other road decommissioning work covered under the Myrtle Cascade project will continue following the implementation of Myrtle HFRA project.

Issue 6. "The project also relies on prospective reductions in sediment from road reconstruction, yet fails to identify which roads, and to what extent, will be reconstructed or reconditioned". (Page 12)

Objector's Suggested Remedy: None

Response: This information was provided in FEIS-Appendix C: pgs. C1-C12, Chapter 4: pgs. 4-22 through 4-24, Map Appendix: pg.14, and the Hydrology Project Files.

Issue 7. "The FEIS also fails to guarantee maintenance of roads into the future, and does not consider the increased use that is likely to occur on reconditioned roads". (Page 12)

Objector's Suggested Remedy: None

Response: Most of the hauling will be on the main Myrtle Creek road which cannot be decommissioned due to the access needs for fire suppression and recreation. The roads will receive maintenance to improve their current condition and reduce hydroconnectivity/diversion potential (FEIS Chapter 3: pgs. 3-1 through 3-28, and Chapter 4: pgs. 4-1 through 4-43). It is also important to note that a number of the high erosion risk roads listed in the Myrtle HFRA FEIS Table 4.1 (pg. 4-7) are on private (Forest Capital Partners, LLC) property, and some of the roads solely on USFS-administered property provide the only access route to private lands. The Forest Service cannot legally authorize road decommissioning/obliteration on private lands. Under the Alaska National Interest Lands Conservation Act (ANILCA) roads providing reasonable access to private inholdings may not be decommissioned. Therefore, these roads were not considered for decommissioning in either the Myrtle-Cascade or Myrtle HFRA analyses. Maintenance will continue as theses roads are needed for fire suppression and recreation. There is no information to support or conclude that road use will increase due to reconditioning,

Issue 8. "Therefore, by the IPNF's own admission, this project would violate TMDL regulations, and therefore the Clean Water Act". (Page 12)

Objector's Suggested Remedy: None

Response: See response to Issue 4 above.

Issue 9. "Because the Myrtle Creek Project fails to carry out the necessary restoration, and because the project will threaten water quality in the stream, we feel that the project does not adequately address the project's purpose and need as currently designed."(Page 13)

Objector's Suggested Remedy: None

Response: See response to Issues 2 and 8 above.

Issue 10. "Instead, the FEIS proposes to compound and exacerbate water quality problems through logging and road reconstruction."(Page 13 & 14)

Objector's Suggested Remedy: None
Response: See response to Issues 4, 5 and 8 above.

Issue 11. "The FEIS does not provide adequate discussion as to how the project will meet State of Idaho standards for drinking water sources, specifically with regards to potential increases in turbidity (as raised in DEIS comments from the Idaho Dept. of Environmental Quality)."(Page 14)

Objector's Suggested Remedy: None

Response: See response to Issue 4 above. See Hydrology Project Files for letters from the Idaho DEQ. See KVRI Myrtle meeting notes (Project File) for information regarding the turbidity discussions, which included Idaho DEQ and the City of Bonners Ferry. The comments/concerns (i.e. roads, treatment types, etc.) raised in the DEIS from the Idaho DEQ were analyzed and addressed in the FEIS.

Issue 12. "…Instead, the IPNF is deferring necessary restoration and relying upon unproven fuels reduction methods (i.e. regeneration logging in mixed and infrequent fire regimes) to 'protect water quality'."(Page 14)

Objector's Suggested Remedy: In watersheds with road densities that are in the moderate-high ranges, with Equivalent Clearcut Areas that range from 21-25% and with Riparian ECAs ranging from 7-15%, it is critical that water quality protection be given highest priority.

Response: The Bonners Ferry Ranger District currently has a contract to decommission 15.5 miles of road in 2007 within the project area using RAC and appropriated funds, proposes to improve road conditions to reduce sedimentation in the FEIS (pgs), and will employ stewardship contracting to implement other watershed restoration activities (FEIS pgs). Other road decommissioning opportunities outlined in the Myrtle-Cascade EIS will be pursued following the implementation of the Myrtle HFRA project. Through the implementation of contracted, proposed, and out-year restoration projects, road densities and ECA in the specified watersheds will be reduced.

See response to Issues 8, and 11 above.

Issue 13. "Finally, the FEIS fails to disclose, with sufficient detail, the role of the City of Bonners Ferry's backup water supply."(Page 14)

Objector's Suggested Remedy: None

Response: The FEIS discloses, in detail, the role of the City of Bonners Ferry's water supply and treatment (FEIS Chapter 3.3: Pgs. 3-11, 3-21, Appendix F: Pgs. F-6, 7, 13, and 14, Hydrology Project Files). The emergency backup water supply comes from the Kootenai River.

Bull Trout/INFS:

Issue 14. "No discussion is provided on whether any of the logging units are adjacent to any of the ECAs, and/or whether the Fisheries Biologist or Hydrologist evaluated and documented this issue." (Page 17)

Objector's Suggested Remedy: None

Response: ECAs are Equivalent Clearcut Acres, and do not represent any specific treatment type, nor do they physically exist in any specific location. ECAs are generated by multiplying disturbed acres by a coefficient that varies by the type of disturbance. ECA is a general subset of some of the original logic that WATSED eventually uses for estimating changes in runoff; but it does not use all the logic and has not been calibrated, validated, or updated for the IPNF. All the methodology reflects is overall age of the timber stands at a point in time. It does not estimate what happens to water or snow, how fast it melts or runs off the landtype, or how it moves through the watershed. The bottom line is that "ECAs" are at best an index of the state of the timber stand. Being an index, an ECA Analysis might be used to flag the need for more intense process of watershed response analysis; which was done in the FEIS using WATSED, WEPP, FuME, etc, as well as the judgment of professionals educated and experienced in how watersheds function, especially in the Selkirks. Because ECA values relate directly to the quality of timbered stands in a watershed, full ECA recovery is not attainable. This is especially true in glaciated watersheds like Myrtle Creek that have large areas that are not under forest cover. Even in forested portions, fire, disease, and natural ecologic processes have always maintained the basin as a mosaic of vegetation age and size.

Issue 15. "Further, the FEIS does not adequately factor in current RHCA road densities." (Page 17)

Objector's Suggested Remedy: None

Response: The FEIS does factor in RHCA road densities for the analysis. (FEIS Chapter 3.3: pgs. 3-13 and 3-23).

Issue 16. "Unfortunately, the FEIS fails to identify the location, intensity or proposals related to road reconstruction, so it is impossible to determine the potential level of impact." (Page 17)

Objector's Suggested Remedy: None

Response: This information was provided in FEIS-Appendix C: pgs. C1-C12, Chapter 4: pgs. 4-22 through 4-24, Map Appendix: pg.14, and the Hydrology Project Files. Roads are not being "reconstructed" but are being reconditioned. Some road improvement activities that the Bonners Ferry Ranger District are proposing include, redesigning and upgrading existing stream crossings, strengthening unstable cut and fill slopes, increasing the frequency of ditch drainage, rolling the road grade, etc.

Issue 17. "The FEIS fails to adequately consider the negative impacts associated with existing roads, road densities and ECAs with regards to hydrological function, water quality and Bull Trout." (Page 17)

Objector's Suggested Remedy: None

Response: The FEIS describes the existing watershed degradation within the project area caused by roads, road densities, and ECAs in great detail (FEIS Chapter 3.3: Pgs. 3-11 to 3-28 and Chapter 4: Pgs. 4-7 to 4-15).

This information on roads and road densities (including their negative impacts) can be found in the FEIS, Chapter 3.3-A.5: pg. 3-13 to 3-16, and 3-23 to 3-24. The information on ECAs (including its negative impacts) can be found in the FEIS, Chapter 3.3-A.6: pg. 3-16 and 3-24 to 3-25. The effects of the roads, road densities, and ECAs specifically with regards to hydrological

function and water quality can be found in the FEIS, Chapter 3.3: pgs. 3-11 to 3-28. The effects of these parameters on Bull Trout can be found in the Fisheries Analysis.

The degree of effect of the above parameters was derived using stream surveys, road surveys, PIBO information, model output, and information from the City of Bonners Ferry, Idaho DEQ, and EPA (Hydrology Project Files: Stream Information, Road Information, and Misc. Support Data).

Issue 18. "What the FEIS fails to mention is that these thresholds were identified in outdated Forest Plans developed prior to INFISH, prior to the listing of Bull Trout and other salmonids, and prior to the listing or areas streams on the 303(d) list (FEIS, 3-14)." (Page 17)

Objector's Suggested Remedy: Instead, the FEIS should rely on commonly utilized criteria for identifying watershed health, such as, 15% ECA and 2.4 mi/mi^2 which were both identified as indicators of watershed "Functioning at Unacceptable Risk" in Section 7 Guidelines for Bull Trout Matrix of Pathways and indicators (USFWS).

Response: Watershed health was analyzed using multiple criteria (FEIS Chapter 3.2: pgs. 3-6 to 3-11). The criteria the objector suggests above is related to Fisheries Resource (see Fisheries Report). This was not the Functioning Status Criteria that was used by the hydrologist. The FEIS states which functioning criteria was used, along with a multitude of other criteria, used in combination to determine the overall watershed health (FEIS Chapter 3.2: pgs. 3-6 to 3.11, Appendix D.5 to D.8: pgs. D-14 to D-17).

Roads:

Issue 19. "The FEIS fails to identify the specific location, intensity or duration of road reconstruction or reconditioning. The FEIS also fails to disclose whether maintenance level will be maintained over the long term, or if roads will be allowed to deteriorate." (Page 18)

Objector's Suggested Remedy: None

Response: See response to Issue 4 above.

Most of the hauling will be on the main Myrtle Creek road which cannot be decommissioned due to the access needs for fire suppression and recreation. The roads will receive maintenance to improve their current condition and reduce hydroconnectivity/diversion potential (FEIS Chapter 3: pgs. 3-1 through 3-28, and Chapter 4: pgs. 4-1 through 4-43). The specific locations and intensity of road reconditioning was described in FEIS Map Appendix: pg. 5 and 14, and Chapter 4: pgs.4-22 to 4-26 and in the Hydrology Project Files.

It is also important to note that a number of the high erosion risk roads listed in the Myrtle HFRA FEIS Table 4.1 (pg. 4-7) are on private (Forest Capital Partners, LLC) property, and some of the roads solely on USFS-administered property provide the only access route to private lands. The Forest Service cannot legally authorize road decommissioning/obliteration on private lands. Under the Alaska National Interest Lands Conservation Act (ANILCA) roads providing reasonable access to private inholdings may not be decommissioned. Therefore, these roads were not considered for decommissioning in either the Myrtle-Cascade or Myrtle HFRA analyses.

Maintenance of these locations will be maintained as needed, as these roads are necessary for fire suppression, recreation, and administrative use.

Issue 20. "…neither the FEIS nor the project file discloses sufficient information with regards to roadwork…Yet there is no in-depth discussion of where this work will occur, how it will be funded, whether it will be guaranteed, nor does the FEIS provide the specific rationale (i.e. quantitative modeling) for the finding that this will decrease sediment delivery to streams." (Page 18)

Objector's Suggested Remedy: None

Response: This is an unsubstantiated opinion. The objector fails to identify what constitutes "sufficient information". See responses to Issues 1, 2, 3, 4, 17, and 18 above.

Issue 21. "The FEIS fails to consider the impacts that will result after roads are reconstructed, reconditioned and/or upgraded. Increased road use will occur (logging trucks, administrative use and recreational use), which intensifies disturbance to ….sedimentation of streams through dust and erosion….." (Page 18)

Objector's Suggested Remedy: None

Response: See responses to Issues 1, 2, 3, 4, 17, and 18 above. Due to access issues and needs traffic will increase regardless if the roads are reconditioned. And because increased use will "intensify disturbance to…sedimentation of streams through dust and erosion", it is even more important to recondition these roads to decrease sedimentation, decrease the potential for failures, and help alleviate erosion issues. The current condition of the roads is in need of improvements. To have road use increase without conducting the needed improvements would potentially create even more sedimentation/erosion concerns.

Issue 22. "Even where road reconstruction/reconditioning can have beneficial impacts by reduction sedimentation, erosion and other processes, the FEIS fails to discuss the negative impacts that can occur with reconstruction/reconditioning. (Page 18)

Objector's Suggested Remedy: None

Response: See responses to Issues 1, 2, 3, 4, 17, and 18 above.

The FEIS clearly states that any increases will be immediate short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H: pgs. 4-9 to 4-29); and the effects would not be detrimental nor permanent. The FEIS also states that the potential for sediment delivery will be further reduced through the implementation of BMPs and other mitigation measures (FEIS Chapter 4: pgs. 4-1 to 4-43).

Issue 23. "Therefore, the assumption that all road reconditioning/reconstruction will improve sediment conditions is inaccurate. Further, road reconditioning/reconstruction has the real potential to introduce sediment through sidecasting of materials into streams, either directly, or indirectly. (Page 18)

Objector's Suggested Remedy: None

Response: The FEIS never makes the statement nor assumption that all road reconditioning/reconstruction will improve sediment conditions.

See responses to Issues 1, 2, 3, 4, 17, and 18 above.

The FEIS clearly states that any increases will be immediate short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H: pgs. 4-9 to 4-29); and the effects would not be detrimental nor permanent. The FEIS also states that the potential for sediment delivery will be further reduced through the implementation of BMPs and other mitigation measures (FEIS Chapter 4: pgs. 4-1 to 4-43).

The FEIS states that Best Management Practices (BMPs) can help mitigate management effects, not altogether eliminate them (FEIS Appendix C: pgs.C-1 to C-12). It is understood that sediment will be generated from activities; but by implementing BMPs and other mitigation measures, potential effects can be lessened (FEIS Chapter 4: pgs. 4-1 to 4-43).

The applications of BMPs are standard procedures for any harvest or fuels reduction project on National Forest System lands. BMPs are a tool with which the State of Idaho implements the Clean Water Act to meet water quality standards. Properly applied, BMPs limit non-point source pollution, the kind of pollution that results from land management activities. Many BMPs are incorporated as contract provisions, others are additional mitigation. Mitigation beyond BMPs for the Myrtle HFRA are specified in the EIS (Appendix C: pgs.C1 to C-12). BMPs are monitored routinely by the Timber Sale Administrators and other specialists during project implementation. If they are not effective or required conditions are not being met, operations are suspended until conditions can be met.

BMP implementation and effectiveness monitoring on the IPNF is reported annually in the Watershed and Fisheries Forest-wide Monitoring Report, and has been found to be effective in meeting or exceeding Idaho Forest Practices requirements (IPNF Monitoring Reports 1998-2004).

BMPs are designed and intended to *minimize* adverse effects of management practices and management systems. There will always be a risk associated with most physical disturbances to the land by management; BMPs will usually prevent the direct or cumulative effects of those practices from altering the beneficial use support capability of the water. But there still is a limit

and an occasional failure. The objector in this paragraph is concluding that Myrtle Creek is a "heavily degraded watershed." This conclusion is unsubstantiated. In terms of the water, the streams, slope stability, and water quality; this conclusion has no validity. Myrtle Creek is a resilient basin as a result of its morphology, geology, glacial history, and climate (FEIS Chapter 3: pgs. 3-1 to 3-21). The main stream is in good condition as is its water quality (FEIS Chapter 3: pgs. 3-20 to 3-22). Its riparian systems are intact and functional (See Fisheries Report). This is evidenced by the rapid recovery the watershed made following the Myrtle Creek Fire and the resulting debris torrents.

Issue 24. "In addition, the FEIS (based on limitations of WATSED, WEPP or other models) failed to evaluate rain-on-snow, potential peak flow, 100 year storms or other events that may occur shortly after road construction, reconstruction or reconditioning". (Page 18 & 19)

Objector's Suggested Remedy: None

Response: As previously stated, Models are not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses. Watershed specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

WATSED is not designed to or intended to predict the response of weather events. It does not even try to estimate single peak flows. It is intended to help estimate the trends and direction of annual and seasonal runoff and sediment in the long-term as a result of typical forest management actions. These are the factors that shape stream channels and drive water-based ecosystems in the watershed. Certainly, peak floods events occur (with or without logging activities); but other methods of hydrologic assessment are necessary to estimate event-based changes if the specialists feel that they are important response elements in the long term.

WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002), as discussed in the FEIS (pgs. 3-1 to 3-28).

WATSED does not evaluate individual rain-on-snow (ROS) events as stated in the FEIS, although the weather patterns that generate ROS events are incorporated into the long-term climatic record that is used to calibrate the model (FEIS Appendix D.3: pgs. D-8 to D-10). The phenomenon of ROS and the resulting impacts from elevated peak flow and sediment movement within the watersheds of the cumulative effects area were discussed (FEIS Chapter 3: pgs. 3-13 and Chapter 4: pgs. 4-2 to 4-5). WATSED is not, nor is it intended to be, an event-based model. This is disclosed in the description and capabilities of the program (FEIS Appendix D.3: pgs. D-8 to D-10. So called "rain-on-snow" events are, in fact, individual weather-driven events.

Watersheds the scale of Snow & Myrtle Creek that have only a third of their area in the "rain-on-snow" sensitivity zone rarely show substantial basin-scale responses as a result of rain-on-snow weather events. They are dominated by the much larger extent of snowpack and *do not* rapidly respond to the mid-winter rain event because the snowpack remains too cold to change state. Certainly, some small drainages lower in the watershed may respond to these events when they infrequently occur; but they have little affect on the watershed or its main stream channel. The FEIS states that both streams and their environments have been and are being shaped by long-term snowmelt runoff patterns (pgs. 3-13 and 3-22). Changes due to management can be effectively estimated and anticipated by the average monthly estimates in WATSED. The premise that rare events (such as infrequent peak flows) are the key factor in shaping streams, long-term water quality, and overall stream conditions is wrong. Such events, when they occur, may have a short term affect; but the trends and sustained conditions and quality of the water resources are driven by seasonal snowmelt responses.

The FEIS discloses the amount of error, limitations and assumptions inherent in the use of each model used (FEIS Chapter 3, section 3.2: pgs. 3-8 to 3-9, and FEIS Appendix D.3: pgs. D-8 to D-12). Several of the models have been verified on the ground. The use of models is pursuant to the Idaho Panhandle National Forests Land and Resource Management Plan (IPNF Forest Plan, p.II-33, 7.).Thus, the application was appropriately applied and use of the WEPP models was appropriate.

Issue 25. "The FEIS claims that 'sediment input…would occur over a span of minutes to several hours' (FEIS, 4-25) as a result of obliteration and culvert replacement". (Page 19)

Objector's Suggested Remedy: We encourage you to incorporate best available science that has found that impacts from roadwork last much longer.

Response: The FEIS states (Chapter 4.2: pg 4-25):

> "The small amount of sediment input during and after obliteration would occur over a span of minutes to several hours. Provided that the "Required Design Criteria for All Action Alternative" are followed, the stream channel restoration is expected to exceed the Idaho 50 NTU (Nephelometric Turbidity Unit) turbidity criterion for short periods of time during instream work (Foltz and Yanosek, 2005). In addition to implementing BMPs, a short term activity exemption from IDEQ may be requested. It is not significant relative to the gains resulting from reduction in sediment risk. Past monitoring of similar project on the Bonners Ferry Ranger District and on the Forest (see Hydrology Project Files) verify that obliteration is an effective means to minimize sediment risk at stream crossings. Wildfire risk would not be affected because the roads proposed for obliteration are not needed for initial attack access for fire suppression and most are not located on the high-risk dry site areas (Myrtle/Cascade FEIS, 2001)".

The best available science suggested for incorporation by the objector regarding the longer lasting impacts of roadwork on sediment input pertains to road maintenance activities. The passage quoted from the FEIS above explains that this "statement" was specifically referring to road obliteration. After a road has been fully obliterated there usually is no longer any need for maintenance, as the road was removed from the landscape and rendered hydrologically inert.

Issue 26. "The FEIS is unclear on whether the proposed road reconditioning activities were the basis for the improvements in water quality, specifically in 303(d) listed streams." (Page 19)

Objector's Suggested Remedy: None

Response: The proposed road reconditioning activities were not the sole basis for the improvements in water quality. Road obliteration, as well as culvert improvements, etc. had a role as to the basis for the improvements to water quality (Chapter 4.2: pgs. 4-36 to 4-43, Appendix D.11: pgs. D-56 to D-65).

Issue 27. "The FEIS is also vague as to whether the proposal to obliterate Road 1309 UA is incorporated into sediment models. This is inappropriate, considering that the IPNF is unable to guarantee that this decommissioning will be accomplished as part of this project." (Page 19)

Objector's Suggested Remedy: None

Response: The obliteration of Road 1309 UA, as well as 402C, was incorporated into sediment models (Hydrology Project Files: Models). The model outputs specific to these roads helped support the determination to obliterate these specific road segments. The IPNF did guarantee that the road decommissioning of 1309 US and 402C will be accomplished as part of this project, by including it in each of the alternatives as a mandatory action (FEIS Chapter 4.2: pg. 4-3, 4-4, 4-9, 4-12 and 4-13).

Issue 28. "The analysis (FEIS, 4-38) includes a speculative and qualitative analysis of the 'effects' of Alternative 2 in the short and long-terms. This qualitative analysis includes unfounded, unguaranteed and unauthorized 'opportunities' that may or may not ever be accomplished. As a result, the project's impacts will not result in decreased sediment and as a result violates the Clean Water Act, TMDLs, the State Anti-degradation Policy, as well as the Forest Plan." (Page 19)

Objector's Suggested Remedy: Any modeling should include only funded, guaranteed and authorized activities.

Response: The analysis on page 4-38 (Table 4.25) of the FEIS is specific to those activities that are guaranteed to occur, have been or will be authorized with this document, and have been analyzed. This analysis is very specific as to those activities that have been presented in each alternative. The detailed specific activity ratings are listed in Appendix D.11.

The analysis also includes future opportunities (Chapter 4.2: pg.4-38, Table 4.26). The future opportunities included in this analysis were analyzed and already authorized in previous documents (Myrtle-Cascade FEIS). Although these opportunities cannot be guaranteed, the Forest Service continues to look for decommissioning opportunities as funding becomes available. Approximately 15 miles of roads in the Myrtle Creek watershed are expected to be decommissioned in 2007. The District received RAC funds in 2006/2007 and are using appropriated dollars (FEIS Chapter 4: pg. 4.2) to decommission 15.5 miles of road, restore fish passage, and improve culverts in 2007 (Hydrology Project Files).

Furthermore, modeling should not only include funded, guaranteed and authorized activities. The purpose of the modeling is to assist in determining what activities should be done and where, depending on the results of the model. They help to locate and prioritize restoration activities. In order to compete for funding, you have to have supporting evidence to show how you came to your conclusions as to which locations have restoration needs, which ones are the highest priority and which activities would be the most beneficial to conduct. Models assist in determining this information.

The results of these models and the way they are presented are a different matter. The analysis and results of the proposed activities should only include those specific activities that may occur due to the specific management activities (alternatives) proposed. As stated above, the FEIS does this.

Issue 29. "What's more, the Myrtle HFRA Project Roads Analysis identifies numerous roads as 'Myrtle-Cascade: planned decom.' From this information, along with on-the-ground information relative to uncompleted road decommissioning, it appears that the IPNF is attempting to double-count the benefits of road decommissioning." (Page 19)

Objector's Suggested Remedy: None

Response: The Myrtle-Cascade ROD authorized obliteration of 36.1 miles of roads within the project area, along with approximately ¼ mile of temporary road obliteration. The temporary road was constructed as an extension of the 633C/633E ("Jump-up") road, and was to be obliterated by the purchaser following harvest. Portions of the Mama Cascade sale requiring this road segment were not yet harvested at the time of the fire and subsequent decision to salvage fire-killed timber from 226 acres. As a result, the Myrtle-Cascade EIS 18.1 Review of New Information and Changed Conditions (10/22/2003) moved this road obliteration responsibility from the purchaser to the District so that it would be available for reforestation activities. A separate decision authorized the placement of a Snotel site along the 633C, retention of the bottom 0.4 miles to facilitate construction and subsequent maintenance of the site, and placement of a gate to block public access to the road. Accordingly, a total of 35.7 miles of previously existing road were slated for removal.

With the exception of the ¼ mile of temporary road, none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37). Thus, the funding was not guaranteed. The District will continue to look for decommissioning opportunities as funding becomes available. Approximately 15.5 miles of roads are expected to be decommissioned in 2007 using RAC and appropriated funds (Project File). The district will actively pursue road-decommissioning activities following the implementation of Myrtle HFRA.

The FEIS is not attempting to "take credit" for road obliteration that has not been completed, it is not necessary for the FEIS to reanalyze for reauthorization the decommissioning of roads that have already been analyzed and authorized. The FEIS is presenting all of the past, present, and reasonably foreseeable activities – including the road decommissioning from Myrtle Cascade EIS.

Modeling

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Some objectors to the project felt that the FEIS discussion on hydrology modeling was inadequate. Their concerns were analyzed and it was determined that the use of the models was appropriate. The specific responses are discussed below for each objection. We would also like to state that the models were discussed several times at the Myrtle collaborative meetings. Detailed information was handed out at the meetings, along with presentations of the models, their uses and limitations, and

some preliminary results. The objectors had many opportunities to bring forth their concerns with the models. We provided additional information on the hydrology models to the Project Files. Rick Patten and Bill Elliot provided additional responses.

Issue 1. "…the FEIS fails to disclose all limitations of these models, does not apply each of them correctly, and does not adequately disclose the existing severity and probable trends of the existing conditions of the project area." (Page 9)

Objector's Suggested Remedy: None

Response: The FEIS discloses the amount of error, limitations and assumptions inherent in the use of WATSED and WEPP (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The ERA model was not used (see Errata Sheet). The use of models is pursuant to the Idaho Panhandle National Forests Land and Resource Management Plan (IPNF Forest Plan, p.II-33, 7.).

Models are not designed to produce precise predictions of runoff and sediment yield; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). Watershed specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

The estimated responses from the models are combined with other sources of information and analysis to help determine the probable effects (FEIS pg. 3-9, and Chapter 3: Section 3.2-D, pgs. 3-6 through 3-11). Other sources of information include water quality data from the City of Bonners Ferry and PIBO data in the Hydrology Project Files.

There is no requirement or necessity to disclose ALL limitations. This is a specious open-ended argument. However, those limitations of a model that are necessary for the specialist to consider that might affect their professional judgments and inferences that are based on those factors are stated; as well as additional, alternative, and/or supporting bases for those judgments. The application of multiple techniques and models is good practice to help address uncertainties, in part perhaps, to model limitations.

Correct application is a professional judgment. This statement seems to be a spurious and unsupported statement of the objectors own opinion.

The statement "…and does not adequately disclose the existing severity and probable trends of the existing conditions of the project area." is just an unsupported opinion.

Issue 2. "The FEIS speaks to the limitations of (WATSED) and describes its use to compare alternatives. It does not, however, specify whether (on page 3-8) the WATSED model has been changes since the 2005 WATBAL Technical Users Guide was updated with corrections….Objectors question whether the model has been corrected to reflect these changes and to specify this within any supplemental changes made to the FEIS." (Page 9)

Objector's Suggested Remedy: *None*

Response: WATSED, which is used on the IPNF, is *not* WATBAL, which is used on the Clearwater NF. WATSED was derived from the logic and concepts originally in WATBAL, and has evolved independently by Region 1 using different computer code and techniques, as well as local data. Changes made to WATBAL or it's user guide are intended for WATBAL only. The R1/R4 Sediment Guides and WATBAL were the underlying bases for WATSED in the 1980s; but they are not the model in use, WATSED is, and it has evolved and been improved since then. The program is designed to be (and has been) calibrated on data collected from the watersheds under the influence of the Selkirk region's geology, morphology, and climate (not the Clearwater's) and has been recalibrated when and if relevant local monitoring data (on landtypes, climate, and watersheds typical of the IPNF) become available.

Issue 3. "The FEIS fails to adequately disclose that WATSED is inadequate for estimating changes in peak flows and water yield caused by logging roads, and fire and their resulting aquatic impacts." (Page 9)

Objector's Suggested Remedy: None

Response: As previously stated, Models are not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS

Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses. Watershed-related specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

What is "adequate disclosure" in the first place? The statement implies that the objector would like an adjudicator to believe something without any suggestion of what "adequate" is in the context of disclosure. In the same sentence, "adequate" is also used to criticize WATSED. In this context, no disclosure inadequacy is intended in the FEIS, or by the professional hydrologists and soil scientist that used WATSED to help formulate their conclusions. It has been demonstrated that WATSED *is* appropriate for estimating trends and potential changes from road networks, fire history, and logging in terms of watershed-response, streamflows, and sediment loading. (WATSED does not
attempt to estimate any "impacts" on aquatic biota.)

Issue 4. "The FEIS lists some of the limitations of WATSED, "It can be assumed that Myrtle Creek [watershed] has been subjected to larger peak flows than what is modeled through WATSED" (FEIS page 3-8) (Page 9)

Objector's Suggested Remedy: None

Response: WATSED is not designed to or intended to predict the response of weather events. It does not even try to estimate single peak flows. It is intended to help estimate the trends and direction of annual and seasonal runoff and sediment in the long-term as a result of typical forest management actions. These are the factors that shape stream channels and drive water-based ecosystems in the watershed. Certainly, peak floods events occur (with or without logging activities); but other methods of hydrologic assessment are necessary to estimate event-based changes if the specialists feel that they are important response elements in the long term.

Issue 5. "But it does not disclose the extent of those limitations associated with the topography of the landscape. "Elevations are very similar, ranging from 1797 feet to 5375 feet in Myrtle Creek and 1760 feet to 5921 feet in Snow Creek. Annual precipitation averages 36 inches in Myrtle Creek and 40 inches in Snow Creek. Portions of both drainages are within the rain-on-snow elevation zone (approximately 28 percent of Myrtle Creek and 39 percent of Snow Creek). The dominant channel forming and sediment transport events are associated with spring runoff" (FEIS page 3-2.) WATSED only estimates changes in average monthly flows, the highest average monthly flow, and the duration of time that flows exceed the highest average monthly flow. This does not and is not an accurate estimate of actual peak flow, which is not adequate for estimating increased channel erosion and sediment transport." (Page 9)

Objector's Suggested Remedy: None

Response: WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

Watersheds the scale of Snow & Myrtle Creek that have only a third of their area in the "rain-on-snow" sensitivity zone rarely show substantial basin-scale responses as a result of rain-on-snow weather events. They are dominated by the much larger extent of snowpack to *do not* rapidly respond to the mid-winter rain event because the snowpack remains too cold to change state. Certainly, some small drainages lower in the watershed may respond substantially to these events when they infrequently occur; but they have little affect on the watershed or its main stream channel. The FEIS is correct that both streams and their environments have been and are being shaped by long-term snowmelt runoff patterns….those whose changes due to management can be effectively estimated and anticipated by the average monthly estimates in WATSED. The premise that rare events (such as infrequent peak flows) are the key factor in shaping streams, long-term water quality, and overall stream conditions is wrong. Such events, when they occur, may have a short term effect; but the trends and sustained conditions and quality of the water resources are driven by seasonal snowmelt responses.

Issue 6. "The FEIS fails in its application of the Water Erosion Prediction Project (WEPP)…The FEIS does not disclose not evaluate the appropriate predictions (or probabilities) of soil erosion…As a result, the WEPP model was not appropriately applied, the direct and indirect cumulative effects were underestimated and the FEIS did not adequately disclose the uncertainty associate with its analysis." (Page 11)

Objector's Suggested Remedy: None

Response: The FuME interface of the WEPP model, which takes into account road usage (gives high and low erosion ranges for road usage), (FEIS Appendix D.3: pgs. D-11 to D-12 and Hydro Project File Model Outputs). As stated above, Models are not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives. The FEIS discloses the amount of error, limitations and assumptions inherent in the use of each model used (FEIS Chapter 3, section 3.2: pgs. 3-8 to 3-9, and FEIS Appendix D.3: pgs. D-8 to D-12). Several of the models have been verified on the ground. The use of models is pursuant to the Idaho Panhandle National Forests Land and Resource Management Plan (IPNF Forest Plan, p.II-33, 7.).Thus, the application was appropriately applied and use of the WEPP models was appropriate.

The objectors provide no references to support their claim that WEPP was not used properly. The objectors provide no scientific support for their claims. The specialists/professionals were well trained in the use of the WEPP models and used it accordingly. (Phone conversation with Bill Elliot).

Issue 7. "WATSED does not evaluate increases in sediment and peak flows specifically resulting from rain-on-snow events." (Page 9)

Objector's Suggested Remedy: None

Response: WATSED does not evaluate individual rain-on-snow (ROS) events as stated in the FEIS, although the weather patterns that generate ROS events are incorporated into the long-term climatic record that is used to calibrate the model (FEIS Appendix D.3: pgs. D-8 to D-10). The phenomenon of ROS and the resulting impacts from elevated peak flow and sediment movement within the watersheds of the cumulative effects area were discussed (FEIS Chapter 3: pgs. 3-13 and Chapter 4: pgs. 4-2 to 4-5).

Only 28 percent of Myrtle Creek is within the rain-on-snow zone. On page 3-13 of the FEIS (FEIS Chapter 3: Section 3.3-A.3) the rain-on-snow discussion states that rain-on-snow is part of the natural processes within the Selkirk Mountains. It goes on to say that the dominant channel forming and sediment transport events in the Myrtle Creek watershed are associated with spring runoff (rather than rain-on-snow episodes). Myrtle Creek is stable and resilient because it developed in response to these variable climatic and geologic processes. The dominant stream types within the project area are high gradient, sediment transport systems that are controlled by cobble, boulders, and bedrock. These stream types are known to be particularly resilient to high runoff/sediment transport events (Rosgen 2002).

WATSED is not, nor is it intended to be, an event-based model. This is disclosed in the description and capabilities of the program (FEIS Appendix D.3: pgs. D-8 to D-10. So called "rain-on-snow" events are, in fact, individual weather-driven events.

Equivalent Clearcut Analysis (ECA):
The Equivalent Clearcut Area model was not used (see Errata Sheet). The FEIS states that the output/data for ECA was derived from the WATSED model (FEIS D.3-B pg. D-10).

Issue 8. "Equivalent Clearcut Area analysis tool (ECA) of the project area was derived using WATSED (FEIS page 3-7). The FEIS fails in the assessment of impacts by using ECA, which is based upon these inadequate WATSED inputs. With a third of the project area within the rain-on-snow elevation zone, and a subsequent methodology of ECA based on WATSED, the agency can not accurately predict water yields and sediment loads. Furthermore, the FEIS does not disclose that the ECA of the Myrtle Creek Watershed far exceeds the United States Fish and Wildlife Service's (USFWS) criteria of over 15% ECA for Functioning at Unacceptable Risk (FUR). Within the habitat types being treated under this project, the time frame for complete ECA recovery to occur is estimated to be 65 to 85 years (USDA FS, 1974, FEIS pg 3-7). In the lower Myrtle Creek watershed "The proposed treatments would raise the ECA percentile to 39%, and increase peak flows up to 20% above baseline conditions" (FEIS page 2-36). Objectors claim the FEIS fails to disclose the limitations of ECA and as a result, any comparison of alternatives, or a decision to move forward with this project is inaccurate and inadequate. (Page 10&11)

Objector's Suggested Remedy: None

Response: WATSED is not designed to produce precise predictions of runoff and sediment yield; rather they are tools intended to provide a method to objectively compare relative differences among alternatives. The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses. Watershed specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

The estimated responses from the models are combined with other sources of information and analysis to help determine the findings of probable effects (FEIS Chapter 3: pgs. 3-16 to 3-18, and FEIS Chapter 3, section 3.2-D: pgs. 3-6 to 3-11), thus any comparison of alternatives, or a decision to move forward with this project are adequate.

The limitations of all methods and analysis used are disclosed in the FEIS (Appendix D.3: pgs. D-8 to D-12 and Chapter 3.2-D: pgs. 3-6 to 3-11).

ECA is a general subset of some of the original logic that WATSED eventually uses for estimating changes in runoff; but it does not use all the logic and has not been calibrated, validated, or updated for the IPNF. All the methodology reflects is overall age of the timber stands at a point in time. It does not estimate what happens to water or snow, how fast it melts or runs off the landtype, or how it moves through the watershed. The bottom line is that "ECAs" are at best an index of the state of the timber stand. Being an index, an ECA Analysis might be used to flag the need for a more intense process of watershed response analysis; which was done in the FEIS using WATSED, WEPP, etc, as well as the judgment of professionals educated and experienced in how watersheds function, especially in the Selkirks. Because ECA values relate directly to the quality of timbered stands in a watershed, full ECA recovery is not attainable. This is especially true in glaciated watersheds like Myrtle Creek that have large areas that are not under forest cover. Even in forested portions, fire, disease, and natural ecologic processes have always maintained the basin as a mosaic of vegetation age and size.

Best Management Practices (BMPs)

Some objectors to the project felt that the use of BMPs is ineffective. We analyzed their concerns and determined that BMPs are effective and the use of BMPs was appropriate.

Issue 9. "In addition, the agency suggests that Best Management Practices (BMPs) can altogether eliminate any negative long term consequences. It fails to address the ineffectiveness of their ongoing management activities and proposes actions that will only exacerbate a heavily degraded watershed. Regional assessments, including those done by USFS researchers, have concluded there is no reliable evidence that BMPs can reduce the impacts of logging and road construction at the watershed scale to an ecologically insignificant level (USFS and BLM 1997c). (Page 19)

Objector's Suggested Remedy: None

Response: The FEIS never makes these statements. The FEIS states that Best Management Practices (BMPs) can help mitigate management effects, not altogether eliminate them (FEIS Appendix C: pgs.C-1 to C-12). It is understood that sediment will be generated from activities; but by implementing BMPs and other mitigation measures, potential effects can be lessened (FEIS Chapter 4: pgs. 4-1 to 4-43).

The applications of BMPs are standard procedures for any harvest or fuels reduction project on National Forest System lands. BMPs are a tool with which the State of Idaho implements the Clean Water Act to meet water quality standards. Properly applied, BMPs limit non-point source pollution, the kind of pollution that results from land management activities. Many BMPs are incorporated as contract provisions, others are additional mitigation. Mitigation beyond BMPs specific to each project (such as Myrtle HFRA) is often identified. BMPs are monitored routinely by the Timber Sale Administrators and other specialists during project implementation. If they are not effective or required conditions are not being met, operations are suspended until conditions can be met.

BMP implementation and effectiveness monitoring on the IPNF is reported annually in the Watershed and Fisheries Forest-wide Monitoring Report, and has been found to be effective in meeting or exceeding Idaho Forest Practices requirements (IPNF Monitoring Reports 1998-2004).

BMPs are designed and intended to *minimize* adverse effects of management practices and management systems. There will always be a risk associated with most physical disturbances to the land by management; BMPs will usually prevent the direct or cumulative effects of those practices from altering the beneficial use support capability of the water. But there still is a limit and an occasional failure. BMP implementation and effectiveness monitoring on the IPNF is reported annually in the Watershed and Fisheries Forest-wide Monitoring Report, and has been found to be effective in meeting or exceeding Idaho Forest Practices requirements (IPNF Monitoring Reports 1998-2004).

The objector in this paragraph is concluding that Myrtle Creek is a "heavily degraded watershed." In terms of the water, the streams, slope stability, and water quality; this conclusion has no validity. Myrtle Creek is a resilient basin as a result of its morphology, geology, glacial history, and climate (FEIS Chapter 3: pgs. 3-1 to 3-21). The main stream is in good condition as is its water quality (FEIS Chapter 3: pgs. 3-20 to 3-22). Its riparian systems are intact and functional (See Fisheries Report). This is evidenced by the rapid recovery the watershed made following the Myrtle Creek Fire and the resulting debris torrents.

Clean Water Act

Issue 10. "Under §313 of the CWA, federal agencies are responsible for compliance with all State requirements for water pollution control, including a State's antidegradation policies:…Road construction and reconstruction and attendant infrastructure can be the source of significant discharge. States are required by CWA §401 to provide a water quality certification before a federal license or permit can be issued for any activity that may result in a discharge into navigable waters " (Page 44-45)

Objector's Suggested Remedy: …"provide a water quality certification before a federal license or permit can be issued for any activity that may result in a discharge into navigable waters.

Response: The substance of this objection was followed up on with IDEQ. IDEQ provided an email clarifying the 401 process and requirements (Hydrology Project File). Furthermore, the FEIS states that antidegradation policies will be followed (FEIS 3.2-C: pgs. 3-4 to 3-6). They include provisions for full protection of existing beneficial uses, maintenance of water quality of high-quality waters, and a prohibition against lowering water quality in outstanding resource waters. In addition, a State's antidegradation policy addresses fill activities in wetlands by ensuring no significant degradation occurs as a result of the fill activity.

The estimated sediment contributions from roads was analyzed as a worst case scenario that assumed that all hauling would occur during unacceptable wet, muddy conditions for the entire year n sediment contributing portions of all haul routes. This was done to estimate the worst-case scenario. This in no way reflects operating procedures. Although hauling might occur during unacceptable conditions for short time periods, monitoring would identify poor conditions (likely within hours, certainly within a day). Monitoring would occur most every day by Sale Administrators and specialists and would identify poor conditions and shut down hauling when poor conditions occurred. In addition specific BMPs and mitigation measures will be adhered to so as to help further reduce the potential for effects from these activities (FEIS Appendix C: pgs. C-1 to C-12).

By following the regulatory framework listed in FEIS 3.2-C: pgs 3-4 to 3-6 (NFMA, IPNF Forest Plan, CWA, State of Idaho's implementation of the CWA, Rules pertaining to the Idaho Forest Practices Act, IDAPA 37.03.07, EO 11988, EO 11990, the Safe Drinking Water Act, and BMPs) mitigation associated with the project would meet the intent of the TMDL and CWA.

Roads

Some objectors to the project felt that the FEIS discussion on roads and their effects were inadequate. We analyzed their concerns and responded to them from multiple resource perspectives.

Issue 11. "The FEIS fails to disclose adequate information describing the type and location of road reconstruction or road reconditioning." (Page 7)

Objector's Suggested Remedy: None

Response: This information was provided in FEIS-Appendix C: pgs. C1-C12, Chapter 4: pgs. 4-22 through 4-24, Map Appendix: pg.14, and the Hydrology Project Files.

Issue 12. "The FEIS does not include an analysis of which roads and road segments are vital to ongoing fire suppression efforts and recreational access." (Page 7)

Objector's Suggested Remedy: None

Response: The ID Team completed the Roads Analysis Process (RAP) for the Myrtle HFRA project (Project Files). This process analyzed all roads in the project area from the variety of different resource perspectives, including for fire suppression efforts and recreational access. Those roads deemed critical for these operations were left open, but will be maintained or improved to include…(culverts, dips, reduce hydroconnectivity/diversion potential…(FEIS Chapter 4: 4-22 to 4-26). FEIS chapter 4: pg. 4-25 also states that the roads proposed for obliteration are not needed for initial attack access for fire suppression.

Issue 13. The FEIS does not address the additional road network created illegally, or address the additional compaction and changes to hydrology due to off road vehicles (ORV) and/or snowmobiles." (Page 7)

Objector's Suggested Remedy: None

Response: Illegal road network is not expected to increase; thus additional changes in hydrology due to ORV and/or snowmobile use, is not expected to occur. There is no evidence to suggest that this project will increase illegal road networks.

Issue 14. "…the Forest Service cannot justify maintenance work for logging haul routes over decommissioning these road segments." (Page 8)
Objector's Suggested Remedy: None

Response: Most of the haul routes will be on the main Myrtle Creek road and cannot be decommissioned due to the access needs for fire suppression and recreation, as explained above (Issue 12). The roads will receive maintenance to improve their current condition and reduce hydroconnectivity/diversion potential (FEIS Chapter 3: pgs. 3-1 through 3-28, and Chapter 4: pgs. 4-1 through 4-43). It is also important to note that a number of the high erosion risk roads listed in the Myrtle HFRA FEIS Table 4.1 (pg. 4-7) are on private (Forest Capital Partners, LLC) property, and some of the roads solely on USFS-administered property provide the only access route to private lands. The Forest Service cannot legally authorize road decommissioning/obliteration on private lands. Under the Alaska National Interest Lands Conservation Act (ANILCA) roads providing reasonable access to private inholdings may not be decommissioned. Therefore, these roads were not considered for decommissioning in either the Myrtle-Cascade or Myrtle HFRA analyses.

Issue 15. "Twenty-one of the 39 road segments listed in Table 3.3 are not included in Aquatic Map 5, which illustrates ranking for potential road decommissioning. The following road segments are listed as priorities within Aquatic Map 5, but are not included in Table 3-3: 402A, 402C, 402US, 402UU, 402UY, 402UZ, 661UG, 661U, 633, 633UA, 633UP, 2400UA, 2405CUA, 2405DUC, 2405UC, 2405UG, 2405UL, 2405UP, 2406UD, 2406UE, 2409UC, 2409UI." (Page 8)
Objector's Suggested Remedy: None

Response: All road/road segments listed above are detailed in the tables Table D.1 and D.2 in Appendix D.9 (FEIS pgs. D-18 to D-2. Road 402A is listed in Table 3.6 not 3.3 as it is a part of the Snow Creek Watershed (FEIS Chapter 3: pg. 3-24). Road 661U is not on Aquatics Map 5. Road 633 was not ranked, nor is it going to be decommissioned because it is the main Myrtle Creek Road (FEIS Appendix D: pg. D-20). Road 2405UC is in Table 3.3 and on Aquatics Map 5. All other roads/road segments listed above are in the detailed tables in FEIS Appendix D.9 (pgs. D-18 through D-21). Table 3.3 and 3.6 lists the main roads only, without all the small spur roads throughout the watershed. FEIS Chapter 3.3 focused on the main roads, understanding that their spurs are included in the road system network.

Issue 16. "The agency should have chosen another process if the project's identified purpose and need was to improve the hydrological aspects of the watershed." (Page 8)

Objector's Suggested Remedy: The Agency could have employed stewardship contracting in order to utilize actual restoration work, as the FEIS illustrates that the current problem is the road network.

Response: We will be employing stewardship projects in order to complete restoration work in the Myrtle and Snow Creek watersheds (FEIS Chapter 4: pgs. 4-9 to 4-10). Other planned restoration activities not described in the Myrtle HFRA were covered under the Myrtle Cascade FEIS. We received RAC funds in 2006/2007 and are using appropriated dollars (FEIS Chapter 4: pg. 4.2) to decommission 15.5 miles of road, restore fish passage, and improve culverts in 2007 (Hydrology Project Files). Other road decommissioning work covered under the Myrtle Cascade project will continue following the implementation of Myrtle HFRA project.

Issue 17. "Despite changes in management techniques and engineering technology, the encroachment of roads in riparian areas is directly affecting channel morphology." (Page 10)

Objector's Suggested Remedy: The FEIS should correct this statement, acknowledging that this isn't a historical issue, but a current one.

Response: The roads issue, including its impacts, is addressed as an existing condition (FEIS Chapter 3: pgs. 3-1 to 3-28). It is stated that roads are the main contributing factor of human-caused erosion in the watershed (FEIS pg. 3-15). It is also stated that channel morphology has stabilized in most places and is currently able to maintain its dimensions, pattern, and profile; thus sustain its beneficial uses (FEIS Chapter 3.3). PIBO monitoring data from 2001 and 2006 shows a maintained sinuosity, decreased entrenchment, a decreased width to depth ratio, a deeper average residual pool depth, a number of pools per mile that exceeds riparian management objectives, improved bank stability, and larger volumes of large wood (Hydrology Project Files). These are all signs of a resilient stream on a trend of improvement.

Issue 18. "The FEIS does not disclose the amount nor addresses how this will influence sediment delivery and changes in peak flows." (Page 10)

Objector's Suggested Remedy: None

Response: The locations of roads, their proximity to streams, and their crossings are disclosed in FEIS Aquatics Map 3, Chapter 3.3-A.5, Chapter 3.3-B.4, and the hydrology project files. Sediment delivery was analyzed in detail, as was the changes in peak flows. See responses to Issues 2, 3, 4 and 5 above.

Issue 19. "The FEIS does not adequately address/disclose that the proposed road work will significantly increase erosion and sediment delivery." (Page 10)

Objector's Suggested Remedy: None

Response: The FEIS clearly states that any increases will be immediate, short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H); and the effects would not be detrimental nor permanent. The FEIS also states that the potential for sediment delivery will be further reduced through the implementation of BMPs and other mitigation measures (FEIS Chapter 4: pgs. 4-1 to 4-43).

Issue 20. "The FEIS has failed to disclose that previous road decommissioning identified and required in previous projects such as the Myrtle Cascade project, have yet to be completed." (Page 8)
Objector's Suggested Remedy: None

Response: The Myrtle-Cascade ROD authorized obliteration of 36.1 miles of roads within the project area, along with approximately ¼ mile of temporary road obliteration. The temporary road was constructed as an extension of the 633C/633E ("Jump-up") road, and was to be obliterated by the purchaser following harvest. Portions of the Mama Cascade sale requiring this road segment were not yet harvested at the time of the fire and subsequent decision to salvage fire-killed timber from 226 acres. As a result, the Myrtle-Cascade EIS 18.1 Review of New Information and Changed Conditions (10/22/2003) moved this road obliteration responsibility from the purchaser to the District so that it would be available for reforestation activities. A separate decision authorized the placement of a Snotel site along the 633C, retention of the bottom 0.4 miles to facilitate construction and subsequent maintenance of the site, and placement of a gate to block public access to the road. Accordingly, a total of 35.7 miles of previously existing road were slated for removal.

With the exception of the ¼ mile of temporary road, none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37). The District will continue to look for decommissioning opportunities as funding becomes available. Approximately 15.5 miles of roads are expected to be decommissioned in 2007 using RAC and appropriated funds (Project File). The district will actively pursue road-decommissioning activities following the implementation of Myrtle HFRA.

Miscellaneous

Issue 21. "The hydrology analysis used in the FEIS is flawed. Therefore, the FEIS cannot make any defensible determination about environmental consequences of the proposed activities on water and soil resources." (Page 11)

Objector's Suggested Remedy: None

Response: See responses to Issues 1-21 above and Issues 1-27 below (responses to Jonathan J Rhodes).

Issue 22. "This project will provide much greater public access for recreational activities by opening up otherwise inaccessible areas for hunting, fuel wood gathering and general off-road vehicle activity." (Page 15)

Objector's Suggested Remedy: None

Response: This project will not provide greater public access for recreational activities. Hunting is not allowed in Myrtle Creek, thus there will be no opening up otherwise inaccessible areas for hunting. Fuel wood gathering was taken into account for the analysis under the "Reasonably Foreseeable Activity Analysis" in the FEIS Chapter 4.2-B: pg 4-2. Illegal road network is not expected to increase; thus additional changes in hydrology due to ORV and/or snowmobile use, is not expected to occur. There is no evidence to suggest that this project will increase illegal road networks. In fact, approximately 15.5 miles of roads are expected to be decommissioned in 2007 using RAC and appropriated funds (Project File). The district will actively pursue road-decommissioning activities following the implementation of Myrtle HFRA (FEIS Chapter 4: pgs. 4 4-2 to 4-5).

Modeling

Objector: Jonathan J. Rhodes (for the Lands Council)

Some objectors to the project felt that the FEIS discussion on hydrology modeling was inadequate. Their concerns were analyzed and it was determined that the use of the models was appropriate. The specific responses are discussed below for each objection. We would also like to state that the models were discussed several times at the Myrtle collaborative meetings. Detailed information was handed out at the meetings, along with presentations of the models, their uses and limitations, and some preliminary results. The objectors had many opportunities to bring forth their concerns with the models. We provided additional information on the watershed models to the Project Files. Rick Patten and Bill Elliot, the authors of the WATSED and WEPP models, provided additional input on the appropriate use of these models.

Issue 1. "The EIS fails to adequately disclose that WATSED is inadequate for estimating changes in peak flows and water yield caused by logging, tree removal, roads, and fire and their resulting aquatic impacts…therefore, the EIS clearly fails to disclose the model's limitations with respect to peak flows, as well as failing to analyze impacts on peak flows." (Paragraph 22)

Objector's Suggested Remedy: None

Response: The WATSED model is not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions. The estimated responses from the models are combined with other sources of information and analysis to help determine the findings of probable effects (FEIS pg. 3-10 & 11, and Chapter 3, Section 3.2). Watershed specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10: pgs. D-22 to D-56 and Hydrology Project Files-Stream Surveys).

No disclosure inadequacy is intended in the FEIS, or by the professional hydrologists and soil scientist that used WATSED to help formulate their conclusions. It has been demonstrated that WATSED *is* appropriate for estimating trends and potential changes from road networks, fire history, and logging in terms of watershed-response, streamflows, and sediment loading. (WATSED does not attempt to estimate any "impacts" on aquatic biota.)

Issue 2. "The FEIS fails to reasonably disclose if the sediment modeling in the EIS comports with the proposed actions and their impacts...However, the EIS fails to reasonably disclose how the treatments were modeled, in terms of locations, impacts, and treatments...Therefore, the EIS fails to reasonably disclose factors that significantly influence the potential veracity of the modeling of sediment delivery under the alternatives." (Paragraph 46)

Objector's Suggested Remedy: None

Response: The FEIS explains in detail how the models were used and where they were used (FEIS-3.2: pgs. 3-1 to 3-11, 4.2: pgs. 4-1 to 4-40). The Hydro Project File also contains all model outputs, assumptions, inputs and supporting documentation of the models used. The FuME model takes into account different treatment activities (i.e. underburning, tractor harvesting, skyline harvesting, helicopter harvesting, road usage associated with the activities, etc.). The models take into account locations, impacts, treatments, topography, etc. The EIS and the supporting documentation found in the Hydro Project Files, reasonably disclose factors that significantly influence the potential veracity of the modeling of sediment delivery under the alternatives. Therefore, the location and treatments modeled do comport with the activities as proposed.

Issue 3. "The EIS also fails to adequately analyze and disclose the degradation caused by elevated peak flows under current conditions…EIS contains no reasonable disclosure of the degradation caused by the effects of current conditions on peak flows generated by rain-on-snow events" (Paragraph 15)

Objector's Suggested Remedy: None

Response: Current conditions are described in detail in Chapter 3.3: pgs. 3-11 to 3-28) and the Hydrology Project Files. A description of the existing conditions for streams within Myrtle Creek and Snow Creek watersheds comes primarily from stream surveys conducted by the Forest Service, PIBO monitoring crews, and the Idaho Department of Environmental Quality (FEIS Appendix D.10: pgs.D-22 to D-56, Hydrology Project Files). The data were analyzed in conjunction with other available information (such as photos, historical analysis, etc.) and the results of modeling (FEIS pgs. FEIS Pgs. 3-1 to 3-28, 4.2: Pgs.4-1 to 4-40). Although Myrtle and Snow Creeks are functioning-at-risk, they still maintain their beneficial uses as described in the FEIS. (FEIS 3.3: pgs. 3-11 to 3-28). The cause of degradation (roads, fire) is disclosed in detail in the FEIS (FEIS 3.3: pgs. 3-11 to 3-28, Hydrology Project File). Watershed trend is also disclosed in detail in the FEIS Appendix D.11: D-56 to D-65).

WATSED does not evaluate individual rain-on-snow (ROS) events as stated in the FEIS, although the weather patterns that generate ROS events are incorporated into the long-term climatic record that is used to calibrate the model (FEIS Appendix D.3: pgs. D-8 to D-10). The phenomenon of ROS and the resulting impacts from elevated peak flow and sediment movement within the watersheds of the cumulative effects area were discussed (FEIS Chapter 3: pgs. 3-13 and Chapter 4: pgs. 4-2 to 4-5).

Only 28 percent of Myrtle Creek is within the rain-on-snow zone. On page 3-13 of the FEIS (FEIS Chapter 3: Section 3.3-A.3) the rain-on-snow discussion states that rain-on-snow is part of the natural processes within the Selkirk Mountains. It goes on to say that the dominant channel forming and sediment transport events in the Myrtle Creek watershed are associated with spring runoff (rather than rain-on-snow episodes). Myrtle Creek is stable and resilient because it developed in response to these variable climatic and geologic processes (FEIS Chapter 3.3: pgs. D3-11 to 3-28). The dominant stream types within the project area are high gradient, sediment transport systems that are controlled by cobble, boulders, and bedrock (FEIS Chapter 3.3: pgs. D3-11 to 3-28). These stream types are known to be particularly resilient to high runoff/sediment transport events (Rosgen 2002).

WATSED is not, nor is it intended to be, an event-based model. This is disclosed in the description and capabilities of the program (FEIS Appendix D.3: pgs. D-8 to D-10. So called "rain-on-snow" events are, in fact, individual weather-driven events.

Issue 4. "Although undisclosed in the EIS, the water yield component of WATSED only estimated changes in average monthly flows, the highest average monthly flow, and the duration of time that flows exceed the highest average monthly flow…This is a significant defect because increased peak flow triggers elevated channel erosion and sediment transport adding to downstream sedimentation that reduces the survival of salmonids…(Paragraph 22 and 23)

Objector's Suggested Remedy: None

Response: WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are

Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

Watersheds the scale of Snow & Myrtle Creek that have only a third of their area in the "rain-on-snow" sensitivity zone rarely show substantial basin-scale responses as a result of rain-on-snow weather events. They are dominated by the much larger extent of snowpack to *do not* rapidly respond to the mid-winter rain event because the snowpack remains too cold to change state. Certainly, some small drainages lower in the watershed may respond substantially to these events when they infrequently occur; but they have little affect on the watershed or its main stream channel. The FEIS is correct that both streams and their environments have been and are being shaped by long-term snowmelt runoff patterns. Those whose changes are due to management can be effectively estimated and anticipated by the average monthly estimates in WATSED. The premise that rare events (such as infrequent peak flows) are the key factor in shaping streams, long-term water quality, and overall stream conditions is wrong. Such events, when they occur, may have a short term effect; but the trends and sustained conditions and quality of the water resources are driven by seasonal snowmelt responses.

Issue 5. "Therefore it is clear that WATSED is incapable of estimating changes in the most important streamflow attributes with respect to the alteration of channels, sediment transport…(Paragraph 26)

Objector's Suggested Remedy: None

Response: See response to Issue 4 above.

Issue 6. "For these reasons, the EIS does not adequately assess and disclose the alternatives' impacts on these resources and processes." (Paragraph 26)

Objector's Suggested Remedy: None

Response: As previously stated, Models are not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D.3: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses. Watershed-related specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10: pgs.D-22 to D-56 and Hydrology Project Files-Stream Surveys).

Several models were used in order to conduct a thorough analysis of the alternatives' impacts on resources. WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3, section 3.2. Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with Fuel management activities (FEIS 3.2-D3, 3.2-C: pgs.3-4 to 3-6). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in Chapter 3 (FEIS Section 3.2: pgs. 3-9 to 3-11 and Appendix D.10: pgs.D-22 to D-56). Myrtle Creek is stable and resilient because it developed in response to these variable climatic and geologic processes. The dominant stream types within the project area are high gradient, sediment transport systems that are controlled by cobble, boulders, and bedrock. These stream types are known to be particularly resilient to high runoff/sediment transport events (Rosgen 2002).

The estimated responses from the models are combined with other sources of information and analysis to help determine the findings of probable effects (FEIS Pg. 3-10 & 11, and Chapter 3, section 3.2), thus any comparison of alternatives, or a decision to move forward with this project are adequate.

Issue 7. "The EIS compounds these significant defects in the analysis, by failing to disclose that WATSED only estimates change in highest average monthly flow and not peak flows." (Paragraph 26)

Objector's Suggested Remedy: None

Response: WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative

effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

Watershed the scale of Snow & Myrtle Creek that have only a third of their area in the "rain-on-snow" sensitivity zone rarely show substantial basin-scale responses as a result of rain-on-snow weather events. They are dominated by the much larger extent of snowpack to *do not* rapidly respond to the mid-winter rain event because the snowpack remains too cold to change state. Certainly, some small drainages lower in the watershed may respond substantially to these events when they infrequently occur; but they have little affect on the watershed or its main stream channel. The FEIS is correct that both streams and their environments have been and are being shaped by long-term snowmelt runoff patterns….those whose changes due to management can be effectively estimated and anticipated by the average monthly estimates in WATSED. The premise that rare events (such as infrequent peak flows) are the key factor in shaping streams, long-term water quality, and overall stream conditions is wrong. Such events, when they occur, may have a short term affect; but the trends and sustained conditions and quality of the water resources are driven by seasonal snowmelt responses.

See responses to Issue 1 and 4 above.

Issue 8. "The EIS also fails to adequately disclose that WATSED seriously underestimates changes in water yield caused by logging and roads. King (1989) tested the accuracy of the method used in WATSED used to estimate changes in water yield…." (Paragraph 27)

Objector's Suggested Remedy: None

Response: As previously stated, Models are not designed to produce precise predictions of runoff and sediment delivery; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions and rarely should they be the only tools utilized for analysis of watershed responses. Watershed-related specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

No disclosure inadequacy is intended in the FEIS, or by the professional hydrologists and soil scientist that used WATSED to help formulate their conclusions. It has been demonstrated that WATSED *is* appropriate for estimating trends and potential changes from road networks, fire history, and logging in terms of watershed-response, streamflows, and sediment loading. WATSED does not attempt to estimate any "impacts" on aquatic biota.

King (1989) did not specifically test the accuracy of the method used in WATSED used to estimate changes in water yield. King's study analyzed ECA as a function of elevation, whereas WATSED takes into account other factors to generate ECA numbers, and does not use the ECA analysis method to determine effects. Nor were the WATSED generated numbers for ECA used for an "ECA analysis".

See responses to Issues 1 and 3 above.

Issue 9. "Therefore, the EIS fails to reasonably disclose the model's limitations and the limited usefulness of its results." (Paragraph 28)

Objector's Suggested Remedy: None

Response: WATSED is not designed to or intended to predict individual peak flow response to weather events. It is intended to help estimate the trends and direction of annual and seasonal runoff and sediment in the long-term as a result of typical forest management actions. These are the factors that shape stream channels and drive water-based ecosystems in the watershed. Certainly, peak floods events occur (with or without logging activities); but other methods of hydrologic assessment are necessary to estimate event-based changes if the specialists feel that they are important response elements in the long term.

WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). Other methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

See response to Issue 2 above.

Best Management Practices (BMPs)

Some objectors to the project felt that the use of BMPs is ineffective. We analyzed their concerns and determined that BMPs are effective and the use of BMPs was appropriate.

Issue 10. "...there is no realiable empirical evidence that the application of BMPs can reduce the impacts of logging and road construction at the watershed scale to an ecologically insignificant level..." (Paragraph 50)

Objector's Suggested Remedy: None

Response: The FEIS never makes these statements. The FEIS states that Best Management Practices (BMPs) can help mitigate management effects, not altogether eliminate them (FEIS Appendix C: pgs.C-1 to C-12). It is understood that sediment will be generated from activities; but by implementing BMPs and other mitigation measures, potential effects can be lessened (FEIS Chapter 4: pgs. 4-1 to 4-43).

The applications of BMPs are standard procedures for any harvest or fuels reduction project on National Forest System lands. BMPs are a tool with which the State of Idaho implements the Clean Water Act to meet water quality standards. Properly applied, BMPs limit non-point source pollution, the kind of pollution that results from land management activities. Many BMPs are incorporated as contract provisions, others are additional mitigation. Mitigation beyond BMPs specific to each project (such as Myrtle HFRA) is often identified. BMPs are monitored routinely by the Timber Sale Administrators and other specialists during project implementation. If they are not effective or required conditions are not being met, operations are suspended until conditions can be met.

BMP implementation and effectiveness monitoring on the IPNF is reported annually in the Watershed and Fisheries Forest-wide Monitoring Report, and has been found to be effective in meeting or exceeding Idaho Forest Practices requirements (IPNF Monitoring Reports 1998-2004).

BMPs are designed and intended to *minimize* adverse effects of management practices and management systems. There will always be a risk associated with most physical disturbances to the land by management; BMPs will usually prevent the direct or cumulative effects of those practices from altering the beneficial use support capability of the water. But there still is a limit and an occasional failure. The objector in this paragraph is concluding that Myrtle Creek is a "heavily degraded watershed." In terms of the water, the streams, slope stability, and water quality; this conclusion has no validity. Myrtle Creek is a resilient basin as a result of its morphology, geology, glacial history, and climate. The main stream is in good condition as is its water quality. Its riparian systems are intact and fully functional. This is evidenced by the rapid recovery the watershed system made to the Myrtle Creek Fire and the debris torrents that followed.

Issue 11. "The EIS fails to reasonably disclose scientific information on the limited effectiveness of Best Management Practices (BMPs)...The EIS fails to disclose that these visual inspections are subjective, qualitative, prone to both error and abuse, and, inadequate as a basis for reasonably determining the effectiveness of BMP's." (Paragraph 49)

Objector's Suggested Remedy: None

Response: See response to Issue 10 above. The use of BMPs became a requirement in the mid-1970s. Since then, turbidity data provided by the City of Bonners Ferry shows a significant decline in the May-June monthly averages for turbidity

(measured in NTUs) (Hydrology Project Files). For example, in 1959 the value for May was 10.211 NTUs (no record is available for June 1959). In 1960, May's value was 12.209 NTUs and June's was 25.173 NTUs. Through the decade of the 1960s, the highest reading was 25.173 in June 1960; the lowest value was 5.954 in May, 1966. For June 1974, the value was 13.933. In 1979 and 1980, the four monthly averages were all less than 1.0 NTUs (varying from a high of 0.651 to a low of 0.458 NTUs) (FEIS Appendix F.2-FF: Pgs. F-13 and 14). Proper application of BMPs has been found to be effective. Soil disturbance is limited on both a unit and landscape basis through the use of mitigations and BMPS. Various monitoring results support the FEIS's analysis of BMP effectiveness including: Monitoring on Bitterroot NF-2004 Department of Forestry Audit report; BMP monitoring on the Lolo NF; and Idaho Panhandle NF monitoring reports (1997-2004).

Roads

Some objectors to the project felt that the FEIS discussion on roads and their effects were inadequate. We analyzed their concerns and responded to them from multiple resource perspectives.

Issue 12. "The FEIS does not adequately disclose that the proposed road work under the action alternatives will significantly increase erosion and sediment delivery." (Paragraph 47)

Objector's Suggested Remedy: None

Response: The FEIS clearly states that any increases will be immediate short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H); and the effects would not be detrimental nor permanent. The FEIS also states that the potential for sediment delivery will be further reduced through the implementation of BMPs and other mitigation measures (FEIS Chapter 4: pgs. 4-1 to 4-43).

Issue 13. "Therefore, the EIS also fails to adequately disclose the existing watershed degradation within the project area caused by roads and logging." (Paragraph 14)

Objector's Suggested Remedy: None

Response: The FEIS describes the existing watershed degradation within the project area caused by roads and logging in great detail (FEIS Chapter 3.3: Pgs. 3-11 to 3-28 and Chapter 4: Pgs. 4-7 to 4-15). Not only does the FEIS clearly state "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), but it lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5).

Issue 14. "The EIS does not reasonably analyze and disclose existing and likely future impacts on channel erosion and resulting impacts on sediment transport and sedimentation." (Paragraph 30)

Objector's Suggested Remedy: None

Response: The FEIS describes, in detail, the existing impacts on channel erosion and resulting impacts on sediment transport and sedimentation (FEIS Chapter 3.3 Pgs. 3-11 to 3-28, Chapter 4.2-K: pgs. 4-36 to 4-39, Chapter 2: Table 2-12: Pgs. 2-36 to 2-38, and Appendix D.11). See response to Issue 4 above.

Issue 15. "Increases in peak flows inexorably increase channel erosion and sediment transport (Dunne et al., 2001), although this is not adequately disclosed in the EIS. Therefore, the EIS fails to reasonably disclose the impacts of the alternatives on sediment yield. For these same reasons, the EIS fails to reasonably differentiate among the alternatives, based on their impacts on sediment transport and yield." (Paragraph 31)

Objector's Suggested Remedy: None

Response: Dunne et al., 2001, states,

> "Of course, even when a consensus has been reached, through development of the appropriate conceptual model about how to represent watershed processes, the mathematical modeling still requires the estimation of some parameters in order to predict hydrologic quantities. These parameters can be obtained from local measurements, or they can be transferred from a distant locality at which they have been evaluated. Both of these activities (which are not mutually exclusive and can be applied in sequence) require skill and experience, but they can be done with a useful degree accuracy for the purposes of CWE prediction. Wigmosta and Burges (1997) demonstrate a

> commonsense approach to applying models of watershed hydrologic response, employing field mapping, simple monitoring, and the hydrologic model itself".

The FEIS does this with its use of models. See response to Issues 1, 2, 4, 6 and 14 above.

Dunne, et al, 2001, also states,

> "Watershed hydrologic models attempt to quantify these responses by representing how various processes (such as evaporation from the canopy and withdrawal of moisture from the root zone, subsurface percolation, and channel conveyance) are affected by sequences of weather events (rain, snowmelt, warm air temperatures, etc.) and watershed characteristics such as topography, channel density, and canopy condition. They can explicitly represent the effects of land-use change or other watershed transformation such as fire, agriculture, etc. by incorporating the spatial distribution of canopy change, the locations of roads, the frequency of disturbance and the history of, or proposals for changes in, any of these characteristics".

Again, the FEIS does this with its use of models. See response to Issues 1, 2, 4, 6 and 14 above.

The FEIS explains, in detail, the impacts of the alternatives on watershed condition, water yield, channel morphology, and water quality, as well as sediment yield (FEIS, Chapter 4.2: pgs. 4-1 to 4-43). The FEIS also displays the short and long-term trend of each alternative on the watershed/aquatic resources (FEIS Chapter 4.2-K: pgs. 4-36 to 4-39, Appendix D-11, and Hydrology Project Files), which includes sediment yield. See responses to Issues 2, 4, 6 and 14 above.

Issue 16. "...The citation for Sugden and Wood (2007) appears in the EIS's list of references, but the findings are not adequately discussed in the assessment of alternative impacts." (Paragraph 47)

Objector's Suggested Remedy: None

Response: Sugden and Wood (2007) state,

> "The predicted sediment yields decline by 63% and 86%, respectively, in the second and third year after grading and confirm the exponential decay curve for post disturbance sediment yield proposed by Megahan (1974). These results are consistent with those of Luce and Black (2001), who reported that sediment yields from roads in the Oregon Coast Range declined by 70% and 87% in the second and third years after grading, respectively. Megahan and Kidd (1972) reported an even more rapid recovery rate for forest roads in the Idaho Batholith, where sediment yields declined by 89% and 99% in the second and third years after construction…Where site specific circumstances dictate that roads must be constructed in more erodible materials or at steeper grades, other BMPs are available to minimize risk to water quality…In addition, road management techniques that restrict vehicular access at times of the year when rutting is likely to occur can help extend the maintenance frequency and reduce sediment production".

This information was taken into account when analyzing the effects of alternative impacts, especially in regards to road reconditioning and maintenance activities. Appropriate BMPs were also designated to minimize risk to water quality; and the restriction of vehicular access at times of the year when rutting is likely to occur was also designated in the FEIS.

The FEIS adequately discusses the assessment of alternative impacts and uses multiples references to confirm and support the conclusions of the effects (Burroughs et. al 1983, Burroughs and King, 1989, Foltz and Truebe 1995, Foltz and Yanosek 2004 and 2005, Hickenbottom 2001, Luce 1997, Megahan et al. 1992, Megahan 1977, Redente et al 1994, Switalski et al. 2004).

Issue 17. "However, the EIS fails disclose the amount of roads that are drain directly into streams, even though such connectivity influences both rates of sediment delivery and changes in peak flows." (Paragraph 42)

Objector's Suggested Remedy: None

Response: The FEIS clearly states that detailed road and culvert surveys and field notes are included in the Hydrology Project Files: Road Information. This documentation discloses such information, as to which roads drain directly into streams.

Issue 18. "The EIS fails to adequately disclose the degree of connectivity of roads and streams in the project area." (Paragraph 42)

Objector's Suggested Remedy: None

Response: The FEIS discloses, in detail, the road numbers, length of road, current classification, current maintenance level, resource issues, decommissioning priority, and erosion risk rating. The FEIS also discloses numerous detailed road and culvert

surveys, photos, and field notes that confirms and supports the conclusions of the FEIS and the degree of connectivity of roads and streams in the project area (Chapter 3.3: pgs. 3-11 to 3-28, Appendix D.9: pgs. D-18 to D-21 and Hydrology Project Files: Road Information). The location of roads and their proximity to streams are displayed in the multiple aquatics maps in the Map Appendix: Pgs. 3 to 6 and 14. Chapter 3.3:Pgs. 3-11 to 3-28, discusses the existing condition and the effects the roads on having on the watersheds within the project area.

Issue 19. "Therefore, the EIS has failed to reasonably disclose existing conditions that strongly influence existing impacts on aquatic resources, including water and fisheries, and strongly affect the impacts of proposed alternatives." (Paragraph 42)

Objector's Suggested Remedy: None

Response: The FEIS does a detailed job of describing the existing condition of the watersheds and what past and present activities are affecting it (Chapter 3.3: pgs. 3-11 to 3-28, Chapter 4.2: pgs. 4-1 to 4-43, Appendix D.9, D.10 and D.11, and the Hydrology Project Files).

Issue 20. "The EIS's analysis and disclosure of stream crossings by roads is not a surrogate for analyzing and disclosing the level of connectivity. (Paragraph 43)

Objector's Suggested Remedy: None

Response: See responses to Issues 16, 17 and 18 above.

Issue 21. "However, the EIS makes no reasonable assessment or disclosure of whether or not the segments proposed for treatments are hydrologically connected to streams. This is a significant failure, because is such treatments are on segments that are not connected to streams, the alteration of road drainage is unlikely to provide significant benefits." (Paragraph 44)

Objector's Suggested Remedy: None

Response: Much analysis has been done to prioritize all roads and road segments for decommissioning. Funds are extremely limited, thus the need to analyze and prioritize which roads are to be decommissioned first so as to ensure achieving the most hydrologic improvements and taking into account those roads that are currently contributing the most negative impacts to the watershed. The FEIS discloses, in detail, the road numbers, length of road, current classification, current maintenance level, resource issues, decommissioning priority, and erosion risk rating. The FEIS also discloses numerous detailed road and culvert surveys, photos, and field notes that confirms and supports the conclusions of the FEIS and the degree of connectivity of roads and streams in the project area (Chapter 3.3: pgs. 3-11 to 3-28, Appendix D.9: pgs. D-18 to D-21 and Hydrology Project Files: Road Information). The location of roads and their proximity to streams are displayed in the multiple aquatics maps in the Map Appendix. Chapter 3.3 discusses the existing condition and the effects the roads on having on the watersheds within the project area. See responses to Issues 17, 18, 19, and 20 above.

Issue 22. "But it fails to analyze and disclose whether the entire length of roads that are connected to streams at crossings will be treated." (Paragraph 45)

Objector's Suggested Remedy: None

Response: Rehabilitation treatments will work towards making the road crossings hydrologically inert (FEIS Chapter 4.2: pgs. 4-22 to 4-26). This includes the length of the road that is contributing to the negative impacts to the streams. Each road and road segment was surveyed individually; thus, the recommendations are site specific (Hydrology Project Files). It would not be in the best interest of the resources to make a recommendation that would be all inclusive and the same for every site/section of the roads.

Issue 23. "...the EIS's failure to reasonably assess and disclose the level of road connectivity and its relationship to activities proposed under the alternatives renders the analysis of the alternatives' impacts on erosion, sediment delivery, and aquatic systems to be inadequate." (Paragraph 45)

Objector's Suggested Remedy: None

Response: See responses to Issues 15, 17, 18, 19 and 20 above.

Peak Flows

Issue 24. "...the EIS failed to reasonably disclose the existing exacerbation of peak flows and its effects caused by existing watershed conditions." (Paragraph 18)

Objector's Suggested Remedy: None

Response: WATSED was not designed to evaluate all hydrologic/watershed functions as explained in the DEIS and FEIS Chapter 3: Hydrology Section. (FEIS pgs. 3-8 to 3-9 and Appendix D.3: pgs. D-8 to D-10). It was used to model existing condition of peak flows, while other methods of analyses used to estimate in-channel and stream bank erosion. All these parameters were measured to provide a thorough analysis and description of existing watershed condition. These other models include the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME): Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with fuel management activities (FEIS Appendix D.3: pgs. D-8 to D-12). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in FEIS Chapter 3: pgs. 3-9 to 3-10 and FEIS Appendix D.10. The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient, sediment transport type channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

Watershed the scale of Snow & Myrtle Creek that have only a third of their area in the "rain-on-snow" sensitivity zone rarely show substantial basin-scale responses as a result of rain-on-snow weather events. They are dominated by the much larger extent of snowpack to *do not* rapidly respond to the mid-winter rain event because the snowpack remains too cold to change state. Certainly, some small drainages lower in the watershed may respond substantially to these events when they infrequently occur; but they have little affect on the watershed or its main stream channel. The FEIS is correct that both streams and their environments have been and are being shaped by long-term snowmelt runoff patterns….those whose changes due to management can be effectively estimated and anticipated by the average monthly estimates in WATSED. The premise that rare events (such as infrequent peak flows) are the key factor in shaping streams, long-term water quality, and overall stream conditions is wrong. Such events, when they occur, may have a short term affect; but the trends and sustained conditions and quality of the water resources are driven by seasonal snowmelt responses.

See response to Issues 1 and 3 above.

Issue 25. "The EIS's failed to reasonably disclose that existing levels of increased peak flows have increased channel erosion, channel scour, and sediment transport." (Paragraph 19)

Objector's Suggested Remedy: None

Response: See response to Issues 1, 2, 3, 4, and 5 and 24 above.

Issue 26. "Although there are methods that can provide some notion of increased channel erosion in response to changes in peak flows, there was no apparent effort to use them for the EIS." (Paragraph 19)

Objector's Suggested Remedy: None

Response: The objector does not suggest any specific methods. The methods of analyses used to estimate in-channel and stream bank erosion included the Water Erosion Prediction Project Models (WEPP, GeoWEPP, FuME). Disturbed WEPP for hillslope erosion, Road:WEPP for road erosion, GeoWEPP for hillslope erosion and cumulative effects related to fire, and WEPP:FuME for analysis of soil erosion rates associated with Fuel management activities (FEIS 3.2-D3: pg. 3-8, 3.2-D4: pg.3-9). Channel morphology, including erosion of stream channels, was assessed through a combination of surveys and inventories in the Snow Creek and Myrtle Creek watersheds as described in Chapter 3 (FEIS Chapter 3, section 3.2: pgs. 3-9 to 3-11 and Appendix D.10: pgs. D-22 to D-56). The predominant channel types within the Myrtle and Snow Creek Watersheds are Rosgen A, Aa+, and B channels. These are high gradient channels that commonly have cobbles, boulders, and bedrock to help support the system. These types of channels are more resilient to increases in peak flow, sediment yield, and rain-on-snow events (Rosgen 2002).

Miscellaneous

Issue 27. "Although the EIS discloses that the watershed has been logged and roaded at levels that have degraded water quality and channel conditions, it does not adequately disclose the existing severity and likely trends under existing conditions." (Paragraph 8)
Objector's Suggested Remedy: None

Response: See responses to Issues 3, 4, 17, 18, 19, 20, and 21 above. Chapter 3.3 describes, in detail, the existing condition for watershed condition, water yield, sediment yield, channel morphology, and water quality. The extent to which the peak flows affect the existing condition is disclosed. The detailed trend analysis is discussed in Chapter 4 of the FEIS (Tables 4.25-4.28, pgs. 4-38 & 4-39) and Appendix D.11: pgs.D-56 to D-65.

Objector: Kootenai Environmental Alliance

Modeling

Some objectors to the project felt that the FEIS discussion on hydrology modeling was inadequate. Their concerns were analyzed and it was determined that the use of the models was appropriate. The specific responses are discussed below for each objection. We would also like to state that the models were discussed several times at the Myrtle collaborative meetings. Detailed information was handed out at the meetings, along with presentations of the models, their uses and limitations, and some preliminary results. The objectors had many opportunities to bring forth their concerns with the models. We provided additional information on the hydrology models to the Project Files. Rick Patten and Bill Elliot provided additional responses.

Issue 1. "The FEIS is required to provide high quality information and expert agency comments, NEPA at 40 CFR 1500.1(b), that explain the scientific tools used by the District Hydrologist to account for ongoing sediment routing in the streams and Creeks in the project area." (Page 11)

Objector's Suggested Remedy: None

Response: The scientific tools used to account for ongoing sediment routing are described, in detail, in the methodology section of Chapter 3.2-D (pages 3-6 through 3-11), and Appendix D.3 to D.11 (pgs. D-8 to D-65).

Issue 2. "The FEIS also is required to provide expert agency comments that confirm the use of the WATSED model is in compliance with NEPA requirements for scientific integrity of discussion and analysis in EIS's at 40 CFR 1502.24." (Page 11)

Objector's Suggested Remedy: None

Response: The information used and provided for the Myrtle HFRA EIS does provide high quality information and expert agency comments. All methodologies and scientific tools used for analysis were provided in the FEIS (3.2-D: pgs. 3-6 to 3-8 and Appendix D.3: pgs. D-8 to D-12). As previously stated, the use of models is pursuant to the Idaho Panhandle National Forests Land and Resource Management Plan (IPNF Forest Plan p.II-33, 7.). The resulting information presented in the EIS, that includes the use of the WATSED model, was reviewed by many peers in the hydrology field, as is the norm.

The FEIS discloses the amount of error, limitations and assumptions inherent in the use of WATSED and WEPP (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The ECA model was not used (see Errata Sheet). The use of models is pursuant to the Idaho Panhandle National Forests Land and Resource Management Plan (IPNF Forest Plan, p.II-33, 7.).

Models are not designed to produce precise predictions of runoff and sediment yield; rather they are tools intended to provide a method to objectively compare relative differences among alternatives (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). The results of the models are not the sole source of information for making resource decisions. (FEIS Chapter 3: Section 3.2-D: pgs. 3-6 to 3-7, and Appendix D: pgs. D-8 through D-12). Watershed specialists also have local site-specific knowledge of the area, have observed and documented conditions in the analysis area, and have knowledge of hydrologic processes and local existing conditions (see survey data and analysis FEIS Appendix D.10 and Hydrology Project Files-Stream Surveys).

The estimated responses from the models are combined with other sources of information and analysis to help determine the probable effects (FEIS pg. 3-9, and Chapter 3: Section 3.2-D, pgs. 3-6 through 3-11). Other sources of information include water quality data from the City of Bonners Ferry, PIBO data, etc. in the Hydrology Project Files.

Limitations of a model that are necessary for the specialist to consider that might affect their professional judgments and inferences that are based on those factors are stated; as well as additional, alternative, and/or supporting bases for those judgments. The application of multiple techniques and models is good practice to help address uncertainties, in part perhaps, to model limitations.

Issue 3. "The Forest Service's high standards require that the WATSED statistical outputs with "confidence intervals, standard deviations or standard errors in association with its conclusions" be clearly presented in the Myrtle Creek FEIS document." (Page 11)

Objector's Suggested Remedy: None

Response: The WATSED outputs are provided in the hydro project files, along with all the other model outputs, and are not required to be in the main documents of the FEIS, as it is supporting evidence and the resulting information is what is needed for the main document. There is no requirement or necessity to disclose ALL limitations. Those limitations of a model that are necessary for the specialist to consider that might affect their professional judgments and inferences that are based on those factors are stated; as well as additional, alternative, and/or supporting bases for those judgments. The application of multiple techniques and models is good practice to help address uncertainties, in part perhaps, to model limitations.

Issue 4. "The FEIS is also required to indicate whether any WEPP validation studies have been conducted in any of the watersheds in the Myrtle Creek cumulative effects analysis area." (Page 10)

Objector's Suggested Remedy: None

Response: WEPP is a physically based model that was developed to be transferred to different areas (Elliot et al 1997, 2001, 2004). The model was validated in various different areas and is applicable to other areas where the model has not been validated. No WEPP validation studies have been conducted in any of the watersheds in the Myrtle Creek cumulative effects analysis area. This does not negate the results or use of the model.

Equivalent Clear Cut Area (ECA)

The Equivalent Clearcut Area model was not used (see Errata Sheet). The FEIS states that the output/data for ECA was derived from the WATSED model (FEIS D.3-B pg. D-10).

Issue 5. "The FEIS is required to describe each of the limitations of the ECA procedure and provide expert agency comments that describe the procedures that are used by the district hydrologist to compensate for the limitations of the ECA procedure." (Page 13)

Objector's Suggested Remedy: None

Response: ECA is a general subset of some of the original logic that WATSED eventually uses for estimating changes in runoff; but it does not use all the logic and has not been calibrated, validated, or updated for the IPNF. All the methodology reflects is overall age of the timber stands at a point in time. It does not estimate what happens to water or snow, how fast it melts or runs off the landtype, or how it moves through the watershed. ECAs are at best an index of the state of the timber stand. Being an index, an ECA Analysis might be used to flag the need for more intense process of watershed response analysis; which was done in the FEIS using WATSED, WEPP, FuME, etc, as well as the judgment of professionals educated and experienced in how watersheds function, especially in the Selkirks. Because ECA values relate directly to the quality of timbered stands in a watershed, full ECA recovery is not attainable. This is especially true in glaciated watersheds like Myrtle Creek that have large areas that are not under forest cover. Even in forested portions, fire, disease, and natural ecologic processes have always maintained the basin as a mosaic of vegetation age and size.

Clean Water Act:

Issue 6. "Given the lack of quantitative sediment data for the three subwatersheds, what quantitative sediment data exists as a result of in-stream sediment measurements that confirms the past logging activities and proposed logging

activities would in fact result in no net increase of sediment in any of the three subwatersheds. What quantitative sediment transport data has been aquired by the Bonners Ferry Ranger District that supports the contention on page 3-5 of the DEIS that past, ongoing, and proposed logging activities will not result in a increase of sediment or temperature in the waterbodies in the three subwatersheds?" (Page 14)

Objector's Suggested Remedy: None

Response: Idaho DEQ conducted their own, independent analysis in regards to the streams mentioned in the Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL). The Forest Service provided information during the collaborative process.

Pebble count data, city water supply data and PIBO data are in the Hydrology Project Files.

By following the regulatory framework listed in FEIS 3.2-C: pgs 3-4 to 3-6 (NFMA, IPNF Forest Plan, CWA, State of Idaho's implementation of the CWA, Rules pertaining to the Idaho Forest Practices Act, IDAPA 37.03.07, EO 11988, EO 11990, the Safe Drinking Water Act, and BMPs) mitigation, as well as other sediment reducing activities (i.e. road decommissioning) associated with the project. would meet the intent of the TMDL and CWA. No net increase in sediment will be accomplished with offsets from other sediment reducing activities.

The FEIS explained, in great detail, the TMDL process (FEIS 3.2-B, Appendix D.2). In the FEIS the TMDL process is also discussed in Chapter 3. As explained, the IPNF was involved in the process. A Kootenai River Subbasin Assessment and development of TMDLs has been conducted through a joint effort of the Idaho Department of Environmental Quality (IDEQ), the Environmental Protection Agency (EPA), and the Kootenai Tribe of Idaho (IDEQ, et. al. 2005). The IPNF participated in the process with technical input and representation on the Kootenai Valley Resource Initiative (KVRI) TMDL Working Group.

The water quality does meet DEQ and EPA standards for drinking water and the City of Bonners Ferry monitors this (DEIS section 3.3-A.15 and FEIS Chapter 3, section 3.3). The Bonners Ferry Ranger District did not conduct water quality sediment sampling, as stated in FEIS 3.2-D.5. The functioning status of the streams and their morphology is monitored. Water quality can be inferred from the turbidity data collected by the city of Bonners Ferry and support the beneficial uses. Past activities have caused sediment deposits and stream bank erosion in certain sections of Snow Creek, Myrtle Creek, and their tributaries. (DEIS sections 3.3-A.8, 3.3-A.20 and FEIS Chapters 3, 4, and Appendix D). Much of this is site specific, though, and overall these creeks have been stable enough to have withstood these past management actions without permanently adversely affecting water quality. With the bedrock and boulder content on several of the reaches surveyed, streambed stability is fair to good (DEIS 3.3-A.14, 3.3-A.20, and FEIS Chapters 3 and 4 and Appendix D).

The Forest Service's measurements, in combination with the City of Bonners Ferry water quality measurements, IDEQ TMDL assessments, and EPAs regulation of municipal waters provides an objective, quantitative and thorough analysis of the watersheds in the Myrtle HFRA project.

Issue 7. "If Idaho DEQ has authorized the Forest Service short-term activities that allow for violations of water quality standards in the Myrtle Creek and Snow Creek watersheds, the FEIS is required to include a copy of the authorization(s) from Idaho DEQ to the Forest Service." (Page 13)

Objector's Suggested Remedy: Include copies of the authorizations(s) from Idaho DEQ in the FEIS.

Response: The substance of this objection was specifically discussed with IDEQ. IDEQ provided an email clarifying the 401 process and requirements (Hydrology Project File). Furthermore, the FEIS states that antidegradation policies will be followed (FEIS 3.2-C: pgs. 3-4 to 3-6). They include provisions for full protection of existing beneficial uses, maintenance of water quality of high-quality waters, and a prohibition against lowering water quality in outstanding resource waters. In addition, a State's antidegradation policy addresses fill activities in wetlands by ensuring no significant degradation occurs as a result of the fill activity. See response to Issue 5 above. Idaho DEQ reviewed the DEIS and provided a comment letter regarding any concerns they may have had (Hydrology Project Files). Idaho DEQ also participated in the Myrtle HFRA public meetings and site visits.

Issue 8. "What quantitative sediment transport data has been acquired by the Bonners Ferry Ranger District that supports the contention on page 3-5 of the DEIS that past, ongoing, and proposed logging activities will not result in a increase of sediment or temperature in the waterbodies in the three subwatersheds." (Page 14)
Objector's Suggested Remedy: None

Response: All acquired data is included in the FEIS and it's supporting Hydrology Project Files (FEIS Appendix D.10: Pgs D-22 to D-56, Hydrology Project Files: Stream Information). Also refer to the response to Issue 8 above.

Literature Citations

Some references were inadvertently left out of the literature citations section (see Errata Sheet). They are located in the Hydrology Project Files.

Issue 9. "The following definitions of functionality are taken from TR-1737-15 (USDA, USDI; 1988). This citation is not shown in the Aquatics literature citations." (Page 14)

Objector's Suggested Remedy: "The TR-1737-15 (USDA, USDI; 1988) document needs to be included as part of the project file and included in the aquatics literature citations."

Response: The reference TR-1737-15 (USDA, USDI; 1998), along with reference TR-1737-16 (USDA, USDI; 1999) was inadvertently left out of the Aquatics Literature Citations Section. They are in the Hydrology Project File. This is in the Errata Sheet.

Issue 10. "The Idaho DEQ Final Public Comment Draft of the It is claimed that the 'Assessment of Water Quality in Kootenai River and Moyie River Subbasin (TMDL), dated May 2006, contains information that directly pertains to the Myrtle Creek logging project. This document is not included in the Aquatics literature citations in the DEIS." (Page 14)

Objector's Suggested Remedy: None

Response: The Idaho DEQ Final Assessment of Water Quality in Kootenai River and Moyie River Subbasin (TMDL), dated September 2006 was used. This is a more current document than the one the objector mentions above (May 2006).

Issue 11. "The Aquatics literature citations do not include Lief and Brink." (Page 12)

Objector's Suggested Remedy: "The FEIS is required to include the Lief and Brink material that is associated with the WATSED model in order to be in compliance with 40 CFR 1502.21 regulations. If the Lief and Brink material is incomplete or unavailable, 40 CFR 1502.22, the FEIS is required to provide expert agency coments as to why the Lief and Brink information is incomplete or unavailable." (Page 12)
Response: This is a misunderstanding of the 40 CFR regulations. It is not required to provide all the internal citations within each reference document. Every citation or reference that we use and cite has its own lengthy list of citations to support the author's work. We are not required to submit internal citations used by the authors. This includes the WATSED and WATBAL references.

Issue 12. "The FEIS is required to indicate whether all WEPP documents and all WEPP reference papers are included in the project files and therefore are available for inspection by the public. (Page 10)

Objector's Suggested Remedy: None

Response: The Hydro Project files of the FEIS do contain WEPP documents, supporting reference papers, and all model output information. The FEIS also listed these references in the Literature Citations Section.

Roads

Some objectors to the project felt that the FEIS discussion on roads and their effects were inadequate. We analyzed their concerns and responded to them from multiple resource perspectives.

Issue 13. "The aquatics cumulative effects analysis in the FEIS needs to indicate whether all road obliteration associated with past FS timber sales in the cumulative effects analysis area did in fact occur." (Page 8)

Objector's Suggested Remedy: None

Response: The FEIS takes all past actions into account when analyzing the cumulative effects area for existing condition. In Chapter 3.3 of the FEIS, it describes in detail, what activities have led to the existing condition, including roads that have or have not been decommissioned with past FS timber sales.

The Myrtle-Cascade ROD authorized obliteration of 36.1 miles of roads within the project area, along with approximately ¼ mile of temporary road obliteration. The temporary road was constructed as an extension of the 633C/633E ("Jump-up") road, and was to be obliterated by the purchaser following harvest. Portions of the Mama Cascade sale requiring this road segment were not yet harvested at the time of the fire and subsequent decision to salvage fire-killed timber from 226 acres. As a result, the Myrtle-Cascade EIS 18.1 Review of New Information and Changed Conditions (10/22/2003) moved this road obliteration responsibility from the purchaser to the District so that it would be available for reforestation activities. A separate decision authorized the placement of a Snotel site along the 633C, retention of the bottom 0.4 miles to facilitate construction and subsequent maintenance of the site, and placement of a gate to block public access to the road. Accordingly, a total of 35.7 miles of previously existing road were slated for removal.

With the exception of the ¼ mile of temporary road, none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37); therefore, much of the decommissioning has not yet occurred. The District will continue to look for decommissioning opportunities as funding becomes available. Approximately 15 miles of roads are expected to be decommissioned in 2007, including the 633E road. Further road decommissioning will occur as future funding becomes available.

Issue 14. "The FEIS needs to provide expert agency comments that indicate whether personnel from the Bonners Ferry Ranger District and/or IPNF produced a storm damage report associated with the July 2004 storm event that is mentioned in the DEIS. The FEIS also needs to provide high quality information that will indicate whether additional storms in the past 10 years resulted in crossings failures/culvert failures in the Myrtle Creek cumulative effects analysis area. If one or more storm damage reports were written, a copy of the report(s) needs to be included in the project files." (Page 10)

Objector's Suggested Remedy: None

Response: The FEIS takes all past actions into account when analyzing the cumulative effects area for existing condition. In Chapter 3.3 of the FEIS, it describes in detail, what activities have led to the existing condition. The Hydrology Project File contains a section that specifically deals with the most current events that have happened in the project area, the events that are still having immediate effects today. All relevant information in regards to the July 2004 storm event is provided in the Hydrology Project Files: Events. The past 10 years of monitoring on the Idaho Panhandle National Forest are included in the Hydrology Project Files: References, and these reports would include storm information for the past 10 years. Expert Agency comments and high quality information and supporting documentation, are supplied in the Hydro Project Files.

Issue 15. "The statements made on page 3-21 regarding culverts [also known as corrugated metal pipes] are factually incorrect." (Page 8)

Objector's Suggested Remedy: The FEIS needs to revise the culvert statements made throughout the DEIS and accurately state the service life for cmp's.

Response: Under "ecologically stable conditions", cmp's may last 70 to 100 years (with the proper coating, installation, etc.). Many of the pipes were installed prior to BMPs, some as early as the 1950's, and were not always sized correctly, installed correctly, nor used additional support (ie. proper coating). With the high rainfall condition, rain-on-snow activity, topography and soils of the landscape, combined with the high road network and multitude of undersized pipes, the Forest Service has observed a much shorter service life for cmps. The characteristics above coupled with the wildfire and storm events, has significantly altered the service life of the cmps in Myrtle and Snow Creek. If the Forest Service were to use the 70 to 100 year service life for cmps, as the objector suggests, then virtually none of the pipes in the project area would need to be improved, replaced or removed. Our evidence shows that this is not the case. (Hydrology Project Files: Road Information).

Miscellaneous

Issue 16. "The FEIS needs to list each of the water bodies within and downstream of the project area that have been surveyed by FS personnel and which have been found to have significant sediment problems, and significant bedload problems." (Page 8)

Objector's Suggested Remedy: None

Response: The FEIS clearly describes the cumulative effects area analyzed (Chapter 3.2-A, 3.3-A.1, 3.3-B.1, Aquatics Map 7). It is not necessary to list any other water bodies located beyond the cumulative effects area. The FEIS clearly describes the stream segments that are TMDL streams, their category status, and the Assessment Unit Status Reports (FEIS Chapter 3: Pgs. 3-4 and 3-5, Appendix D.2: Pgs. D-1 to D-8, and the Hydrology Project File). The FEIS also lists the streams that were surveyed, the year of the most recent survey, and their function status (FEIS Chapter 3.3: Pgs. 3-19 to 3-21 and 3-26 to 3-27). The FEIS shows the location of the surveys within the project area (Map Appendix Page 6) and describes in detail the information collected, how it was analyzed and the conclusions (FEIS Appendix D.10: Pgs. D-22 to D-56).

Issue 17. "Section D.3 in the FEIS should clearly indicate each of the not properly functioning watersheds that are found in the Myrtle Creek HFRA cumulative effects analysis area." (Page 14)

Objector's Suggested Remedy: None

Response: The FEIS clearly lists the functioning status of all waterbodies within the cumulative effects analysis area (Table 3.1 page 3-5, Table 3.4 page 3-20, Table 3-7 page 3-27, Table 4.18 page 4-29, Table 4.19 page 4-31, Table 4.20 page 4-32, Table 4.21 page 4-33, Table 4.22 page 4-35, Table 4.23 page 4-36, and Table 4.24 page 4-37).

Issue 18. "The sediment risk discussions in the DEIS do not include information relating to the flood frequency curve that applies to the sites in the Myrtle Creek, Snow Creek, and Deep Creek subwatersheds that are described on page 3-1 of the DEIS. There is no information in Chapter III that discusses the hydraulic capacity of the culverts that are described as being at risk, page 3-19. The sediment risk analysis in the FEIS is required to provide high quality information concerning one or more flood frequency curves that have been established as part of the sediment risk analysis for the three subwatersheds. Te FEIS is required to provide high quality information listing the hydraulic capacity for each of the corrugated metal culverts that are known to e undersized in each of the three subwatersheds that are located on NFS lands." (Page 9)

Objector's Suggested Remedy: The FEIS needs to display figures similar to Figure 4 shown on page 20 of the Flanagan et al document. The Figure 4 concerns T, Flood Recurrence Interval (years). The figures in the FEIS need to include data showing the discharge necessary to overtop each of the roads that have had precious culvert failures, and the recurrence interval (T) in years for each of the roads.

Response: In watersheds that have been burned and managed, flood frequency curves are affected, especially in a changing climate (i.e. the "100 year flood" seems to come a lot more frequently than every century). The frequency of flood events is not the significant factor in the risk of sediment being recruited to the system; it is the condition of the watersheds - which were documented in several ways (FEIS Chapter 3.3: pgs. 3-11 to 3-28, Hydrology Project Files). The sediment risk analysis was not based on flood frequency. The sediment risk analysis was conducted through a combination of surveys, models, and risk analysis on the culverts (FEIS Chapter 3.2: pgs. 3-6 to 3-11, Appendix D.3: pgs.D-8 to D-12, Hydrology Project Files). The Bonners Ferry Ranger District will also be upgrading several of the culverts identified, thus improving their chances of passing the 100 year flood. Flood Frequency information is located in the Hydrology Project Files.

The risk analysis that was carried out on the culverts had a component of hydraulic capacity. Methods for Inventory and Environmental Risk Assessment of Road Drainage Crossings, by Flanagan et al., 1998, were used. Figure 4 on page 20 of Flanagan et al. (1998) represents a generic process for determining culvert design capacity. Quantitative information that describes the drainage area, discharge event, and hydraulic capacity of each culvert is located in the Hydrology Project Files.

Issue 19. "The FEIS needs to include information relating to the estimated maximum particle sizes that potentially would be mobilized during peak flows in the three subwatersheds." (Page 9)

Objector's Suggested Remedy: None

Response: All acquired data, including particle size distribution information, is included in the FEIS and it's supporting Hydrology Project Files (FEIS Appendix D.10: Pgs D-22 to D-56, Hydrology Project Files: Stream Information).

Issue 20. "In Chapter 4 of the DEIS there are several references to Maps, including Map 4.2.1 as listed on page 4-1; Map 4.3.1 as listed on pages 4-5 and 4-7, Maps 4.2.1 and 4.4.1, page 4-8. There are no maps in Chapter 4." (Page 16)

Objector's Suggested Remedy: The FEIS needs to provide each of the Maps that are cited in Chapter 4 of the DEIS.

Response: As stated in the FEIS, under the subheading "Changes from the Draft EIS to the Final EIS" (page 2-3), several maps were added and several maps were moved to a Map Appendix in the FEIS. The maps specifically stated above (Map 4.2.1 – Cumulative Effects Analysis Area – now Aquatics Map 7; Map 4.3.1 – Project Area Roads and Trails – now Aquatics Map 3; and Map 4.4.1 – Past Timber Harvest Activities – now Past Activities Map 1), are all located in the Map Appendix.

Aquatics / Fish

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1: (AQUATICS / FISH) *The FEIS fails to disclose the efficacy of INFISH Riparian Habitat Conservation Areas (RHCA). Again, Forest Service assessments via the Interior Columbia Ecosystem Management Project (USFS and USBLM 1997a) determined these streams RHCA buffers are inadequate to protect streams from upslope sediment production. (Objection Page 10)*

Suggested remedy: *None given.*

Response: A description of the Riparian Habitat Conservation Areas (RHCAs) per the Inland Native Fish Strategy (INFS) and the estimated effectiveness is discussed on page 2-28 of the FEIS and pages B-56 through B-60 of Appendix B of the FEIS.
The standards and guidelines specified in INFS for the purpose of protecting stream components are based on the best available science thereby "reducing the risk of loss of populations and reducing potential negative impacts to aquatic habitat" (INFS 1995). As referenced in the Idaho Panhandle National Forest Fry Emergence Environmental Assessment (USDA 2005), "a summary of forested streamside research over the last 10 years supports the science used to establish INFISH, with no known new science that contradicts the science used to develop the INFISH strategy (K. Overton, R1/R4/RMRS, Fisheries Technology Transfer Specialist, personal communication with Shanda Dekome, Forest Fisheries Biologist, 2005)". A large scale monitoring effort referred to as PIBO (PACFISH INFISH Biological Opinion) has been underway since 1998 to verify and insure that the management direction contained within INFS continues to adequately protect stream habitat.

In addition, the INFS Environmental Assessment: Decision Notice and Finding of No Significant Impact cited throughout the Myrtle HFRA FEIS states the following:

> Widths of the interim Riparian Habitat Conservation Areas that are adequate to protect streams from non-channelized sediment inputs should be sufficient to provide other riparian functions, including delivery of organic matter and woody debris, stream shading, and bank stability (Brazier and Brown 1973, Gregory et al. 1984, Steinblums et. al 1984, Beschta et al. 1987, McDade et al. 1990, Sedell and Beschta 1991, Belt et al. 1992). The effectiveness of riparian conservation areas in influencing sediment delivery from non-channelized flow is highly variable. A review by Belt et al. (1992) of studies in Idaho (Haupt 1959a and 1959b, Ketcheson and Megehan 1990, Burroughs and King (1985 and 1989) and elsewhere (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that non-channelized sediment flow rarely flows more than 300 feet and that 200-300 foot riparian "filter strips" are generally effective at protecting streams from sediment from non-channelized flow.

As stated in An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins (Quigley and Arbelbide 1997) referred to in the objection as USFS and USBLM 1997a, a review of literature indicates that a RHCA buffer width of 90 meters (295 feet) would maintain stream function from sediment inputs from non-channelized sources and should also be sufficient to provide for other riparian functions with a margin for error. These functions include litterfall/nutrient input and retention in streams, shade to streams for maintenance of summer stream temperatures, woody debris delivery and stream bank stability.

Because of the important role that RHCAs play in protecting aquatic resources, the width of RHCAs is a key component in the sediment erosion models that were utilized in analyzing the potential effects of the proposed activities on stream habitat. A

detailed description of each of the models utilized for the Myrtle Creek HFRA analysis is located on page 3-8 of the FEIS and page D-8 through D-12 of Appendix D of the FEIS.

To obtain the most accurate information from the models, each unit (e.g. Unit B1) was broken up into various hillslope/landscape components using GeoWEPP. The various input parameters such as soil type, forest type, rock content, etc. were then taken into account for each piece of the unit (e.g. Unit B1a, B1b). FuME runs were then conducted on each of these pieces and the results were weighted based on the percentage of the unit each piece encompassed. Each of these model runs and percentages were then compiled to get an overall estimate of sediment erosion from that unit as a result of the proposed activities. In each of these steps, the RHCA widths were factored into the modeling. In areas where a more detailed analysis was needed, additional modeling using Disturbed WEPP and Road WEPP was conducted and analyzed.

The results of the models runs, in conjunction with the model limitations/assumptions, site specific knowledge, field surveys and professional judgment, showed that although there would potentially be some sediment input as a result of the proposed action, none of the unit pieces or an entire unit is expected to input a level of sediment into a stream that would be considered to be detrimental or beyond the capabilities of the watershed. Table 4.24 on page 4-37 of the FEIS summarizes this information by stream with the increase in sediment above the existing condition ranging from one percent to five percent for the proposed action, with the majority of this increase attributed to a short term increase in sediment resulting from road decommissioning, culvert removal and the reconstruction of Forest Road 402C. Results of these model runs on each of the pieces are located in the Hydrology Project File.

Additionally, the IPNF Forest Plan Monitoring Reports (USDA Forest Service 1999, 2000, 2001, 2002, 2003) cited on pages 2-28 and 4-22 of the FEIS, page B-48 in Appendix B and in the Fisheries Biological Assessment were used to demonstrate that monitoring of past timber harvest projects on the IPNF that utilized the INFS RHCA widths have resulted in sediment delivery to streams that is “not measurable” or “is negligible”.

Based on the above information, it was determined that the RHCA widths established for the Myrtle Creek HFRA project, which were based on INFS, were adequate to protect stream habitat and native fish populations from the proposed activities.

Issue 2: (FISH) *Bull trout is a threatened species, Westslope Cutthroat Trout is sensitive species, Burbot is sensitive species, and Interior Redband Trout is a sensitive species. The aforementioned fish species are listed pursuant to the Endangered Species Act, 16 U.S.C § 1531 et seq. (Objection Page 10)*

Suggested remedy: *None given.*

Response: As the objection states, bull trout are listed under the Endangered Species Act (ESA) as a threatened species. However, the objection incorrectly indicates that westslope cutthroat trout, burbot and interior redband trout are listed under ESA, which they are not. Currently all three of those species are designated as sensitive species by the Regional Forester. In fact, as discussed on page B-44 of Appendix B of the FEIS, in 2000 the U.S. Fish and Wildlife Service (USFWS) determined that westslope cutthroat trout did not warrant listing as a threatened species (USDI 2000) and in 2003 the USFWS reconsidered the listing of westslope cutthroat trout and again determined that their listing was not warranted (USDI 2003).

Issue 3: (AQUATICS) *The Myrtle Creek Watershed contains 3.1 mi/mi² of roads in sensitive land types, 2.1 mi/mi² road density in RHCAs, and road density of 2.6 mi/mi². The United States Fish and Wildlife Service Bull Trout Interim Conservation Guidance (BTICG) states that depressed Bull Trout populations had an average watershed road density of 1.4 miles per square mile and were extirpated with road densities above 1.7 miles per square miles. (Objection Page 10)*

Suggested remedy: *None given.*

Response: As was discussed on page B-42 through B-47 and B-61 of Appendix B of the FEIS, bull trout distribution within the aquatics cumulative effects analysis area is very limited due to natural barriers by way of waterfalls in the lower portions of Myrtle Creek and Snow Creek. As a result, bull trout only have the ability to access approximately 4 miles of the over 82 miles of stream habitat (approximately 5%) within the Myrtle Creek and Snow Creek Watersheds with only approximately 1 mile of that occurring within the Myrtle Creek HFRA project area.

In part because the road densities upstream have the potential to affect bull trout habitat below the natural barriers, road reconditioning, which includes redesigning and upgrading stream crossings, and road decommissioning to reduce road densities and the likelihood of sediment into project area streams, is proposed as part the Myrtle HFRA project, which will augment restoration work done under the Myrtle Cascade EIS. The road reconstruction and reconditioning was discussed on

page B-50, B-52, B-54 and B-57 through B-59 of Appendix B of the FEIS and also in Appendix C, Appendix D, Chapter 4: pages 4-22 through 4-24, Map Appendix page 14 and the Hydro Project Files.

> In addition, on pages B-42 through B-44 of Appendix B of the FEIS and in the Bull Trout Matrices and Fisheries Biological Assessment located in the Fisheries Project File, the current condition of the bull trout population within the analysis area is discussed as being extremely low with roads along many other factors (e.g. the presence of brook trout, stream channelization in the lower portion of the watersheds, natural migration barriers and a low population of bull trout within the Kootenai River) cited as reasons for their limited numbers within the area of concern.

The location of road reconstruction and reconditioning was provided in FEIS-Appendix C, Chapter 4: pgs. 4-22 through 4-24, Map Appendix pg. 14, and the Hydro Project Files. Also, a list the roads, their erosion risk rating, and road decommissioning priority can be found in the FEIS Chapter 3.3 and the Aquatics Maps 3, 4, and 5.

Issue 4: *(FISH) The Forest Service Concedes that bull trout (threatened species) may be impacted with the possibility of contributing to a trend toward Federal listing, cause a loss of viability to the population or species. The FEIS fails to disclose any adequate analysis that will protect these sensitive and threatened species. (Objection Page 10)*

Suggested remedy: *None given.*

Response: The objection makes an incorrect statement regarding the effects determination for bull trout in the Myrtle FEIS. An effects determination such as described in the above objection, "may be impacted with the possibility of contributing to a trend toward Federal listing, cause a loss of viability to the population or species", can be made only for species designated by the Regional Forester as sensitive species. Because bull trout are currently listed as threatened under the Endangered Species Act, they can not receive that effects determination. As discussed on pages B-54, B-55, B-61 and B-62 of Appendix B of the FEIS and in the Fisheries Biological Assessment located in the Fisheries Project File, the effects determination for bull trout from the Fish and Wildlife concurrence letter (March 21, 2007) is "May Affect, Not Likely to Adversely Affect".
This effects determination is based on the analysis described on pages 4-1 through 4-40 of the Watershed Hydrology analysis, pages B-47 through B-56 and B-61 of fisheries analysis in Appendix B and the Bull Trout Matrices located in the Fisheries Project File, along with the project design features and mitigation measures described on pages 2-21 through 2-32, page B-48, B-61, B-62 of Appendix B, the Fish Management Direction on pages B-56 through B-60 of Appendix B and the BMPs described in Appendix C of the FEIS.

Issue 5: *(AQUATICS) The FEIS does not disclose that the ECA of the Myrtle Creek Watershed far exceeds the United States Fish and Wildlife Service's (USFWS) criteria of over 15% ECA for Functioning at Unacceptable Risk (FUR). (Objection Page 10)*

Suggested remedy: *None given.*

Response: As disclosed on page 2-36 and 3-3 of the FEIS, the existing ECA value for the Myrtle Creek Watershed is 14%, which is below the 15% value discussed in the U.S. Fish and Wildlife Service's A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale (1998) as "Functioning at Unacceptable Risk".
On the Myrtle Creek Bull Trout Matrix located in the Fisheries Project File, which is based on the USDI Fish and Wildlife Service 1998 document cited in the objection, the determination for the Disturbance History parameter, which is partially based on the ECA value is disclosed as being "Functioning At Risk".

Objector: The Lands Council, et al. – Jonathon Rhodes Declaration

Issue 1: *(AQUATICS) The EIS states repeatedly (e.g., p. 3-13) that the Myrtle Creek watershed is "functioning-at-risk" (FAR). However, the EIS does not disclose or apply the criteria in USFWS (1998), which was developed for Endangered Species Act (ESA) consultations on bull trout, which indicates that watershed is more degraded than disclosed in the EIS. The watershed's road density of 2.6 mi/mi² is in excess of levels (>2.4 mi/mi²) considered to "Functioning at Unacceptable Risk" (FUR). (Objection Item #9)*

Similarly, The EIS states repeatedly (e.g., p. 3-23) that the Snow Myrtle Creek watershed is FAR. However, the EIS, again, fails to disclose that using the criteria in USFWS (1998), the watershed's road density of 2.9mi/mi² is in excess of levels (2.4 mi/mi²) considered to "Functioning at Unacceptable Risk" (FUR). (Objection Item #11)

Suggested remedy: *None given.*

Response: The Objection compares two different systems of analyzing watersheds, one used to describe the overall watershed condition and one used to describe the functionality of parameters with respect to bull trout. As discussed in detail on Page D-16 of Appendix D of the FEIS, the overall watershed condition can generally be determined to be "Properly Functioning", "Functioning-At-Risk" or "Not-Properly-Functioning" based on the information discussed in Appendix D of the FEIS. Separately, based on the document *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* (USDI Fish and Wildlife Service 1998), several different parameters of a watershed affecting bull trout can be analyzed on a parameter by parameter basis in the bull trout matrix and determined to be "Functioning Appropriately", "Functioning At Risk" or "Functioning At Unacceptable Risk" to assist in an overall effects determination on bull trout.

Although the watershed health and the bull trout matrix have an unfortunate overlap in the names of their separate determinations (e.g. Functioning At Risk), they are not based on the same criteria and can not be used interchangeably. Consequently, if there were to be a determination on a particular parameter on the bull trout matrix of "Functioning At Unacceptable Risk", such as is described in the objection, it would not translate into an overall watershed condition determination of "Functioning At Unacceptable Risk" because that determination does not apply to watershed condition. Furthermore, a "Functioning At Unacceptable Risk" determination for one parameter on the bull trout matrix would not translate into a "Not-Properly-Functioning" determination for the overall watershed functionality because as stated previously the two systems are based on entirely different criteria and intended for entirely different purposes and do not directly affect one another.

As far as the contention that the Myrtle Creek and Snow Creek watersheds are more degraded than disclosed, the FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

In addition, the bull trout matrices for Myrtle Creek and Snow Creek, that are directly based on the USDI Fish and Wildlife Service 1998 document cited in the objection, are located in the project file and fully disclose the determinations for all of the parameters discussed in that document. In USDI 1998, it is pointed out that "**the numeric values are not presented as absolutes nor to define data standards**" (emphasis in original). The criteria for determining the functionality call for bull trout with respect to the roads parameter is not solely determined by road density; as noted in that document, the location of roads is also a very important aspect to consider, with valley bottom roads posing the greatest threat to functionality.

Although the road density for Myrtle Creek (2.6 mi/mi^2) and Snow Creek (2.9mi/mi^2) are above the 2.4 mi/mi^2 suggested threshold for a "Functioning At Unacceptable Risk" determination, the roads within the watersheds in question are generally at mid-elevation locations outside of the valley bottoms where they would pose a greater threat. For that reason, along with the very limited use of the watersheds by bull trout due to natural migration barriers, the appropriate determination for the roads parameter is "Functioning At Risk", which is disclosed in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

In addition, because the IPNF recognizes that higher road densities are an issue within the Myrtle Creek watershed, we are actively working to decrease road densities. In fact, there is currently a contract to decommission approximately 15.5 miles of roads within the Myrtle Creek drainage based on the Myrtle Cascade EIS, which will decrease the road density and the ECA values within the drainage.

Issue 2: (AQUATICS) *The Equivalent Clearcut Area (ECA) of 25% for the Myrtle Creek Watershed (p. 3-23) is well in excess of the USFWS (1998) criteria of >15% ECA for FUR. However, the EIS fails to disclose this. (Objection Item #10)*

Suggested remedy: *None given.*

Response: As disclosed on page 2-36 and 3-3 of the FEIS, the existing ECA value for the Myrtle Creek Watershed is 14%, which is below the 15% value discussed in the U.S. Fish and Wildlife Service's *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale* (1998) as "Functioning at Unacceptable Risk".

On the Myrtle Creek Bull Trout Matrix located in the Fisheries Project File, which is based on the USDI Fish and Wildlife Service 1998 document cited in the objection, the determination for the Disturbance History parameter, which is partially based on the ECA value is disclosed as being "Functioning At Risk".

Issue 3: (Aquatics) *Snow Creek's watershed ECA of 21% for is well in excess the USFWS (1998) criteria of >15% ECA for FUR. However, the EIS fails to disclose this. (Objection Item #12)*

Suggested remedy: *None given.*

Response: As disclosed on page 2-37 and 3-3 of the FEIS, the existing ECA value for the Snow Creek Watershed is 6%, which is well below the 15% value discussed in the U.S. Fish and Wildlife Service's *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale* (1998) as "Functioning at Unacceptable Risk".

On the Snow Creek Bull Trout Matrix located in the Fisheries Project File, which is based on the USDI Fish and Wildlife Service 1998 document cited in the objection, the determination for the Disturbance History parameter, which is partially based on the ECA value is disclosed as being "Functioning At Risk".

Issue 4: (FISH) *USFWS (1998) also provides numerous other criteria for determining the level of existing degradation for a variety of watershed, fish population, and fish habitat attributes and processes, including pool frequency, substrate conditions, large wood levels, peak flow alteration and many others. However, the EIS fails to disclose these criteria or the results of their application. The criteria in USFWS (1998) are plainly applicable: they were developed for bull trout, which inhabit streams that are affected by the proposed alternatives. Therefore it is obvious that the EIS fails to reasonably disclose how degraded conditions are with respect to bull trout. (Objection Item #13)*

Suggested remedy: *None given.*

Response: A bull trout matrix directly based on the document referred to in the objection (*A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* - USDI Fish and Wildlife Service 1998) was completed for Myrtle Creek and Snow Creek as part of the analysis process for determining the potential impact of the proposed action on bull trout. The attributes and processes referred to in the objection (e.g. pool frequency, substrate conditions) are the parameters assessed as part of that process. These matrices were in turn part of the Fisheries Biological Assessment that was submitted to the Fish and Wildlife Service and discussed during informal consultation on which concurrence was subsequently received. The FWS concurrence and rationale are within the Myrtle HFRA Biological Opinion located in the Wildlife Project File.

The Myrtle Creek and Snow Creek Bull Trout Matrices and the Fisheries Biological Assessment are located in the Fisheries Project File. The information from the matrices was incorporated into the FEIS throughout the fisheries analysis located on pages B-44 through B-56 of Appendix B of the FEIS.

Issue 5: (AQUATICS) *The EIS also failed to compare existing conditions with the Riparian Management Objectives (RMOs) in INFISH; these RMOs provide quantitative levels of several habitat attributes that are set as desired conditions, including those for water temperature, pool frequency, width/depth ratio, bank stability, large woody debris (LWD) and lower bank angle. INFISH notes (p. A-2) that these RMOs are "…good indicators of ecosystem health." However, the EIS fails to reasonably assess and disclose how the existing condition of attributes set as RMOs compare to the quantatative RMOs set in INFISH. Therefore, the EIS also fails to adequately disclose the existing watershed degradation within the project area caused by roads and logging. (Objection Item #14)*

Suggested remedy: *None given.*

Response: The Riparian Management Objectives (RMOs) are described in the Inland Native Fish Strategy (USDA 1995), which was cited in the FEIS. On page B-48 of Appendix B of the FEIS, the habitat parameters potentially affected by the proposed action are listed, which are based directly on the INFS RMOs. The fisheries analysis on pages B-42 through B-56 incorporates discussions on the existing condition of project area streams with respect to these habitat parameters (e.g. RMOs) and then analyzes and discloses the potential impacts on these parameters.

As part of the analysis process, a bull trout matrix was completed for Myrtle Creek and Snow Creek to assist in determining the potential impact of the proposed action on bull trout. The INFS RMOs along with several other parameters are discussed within those

matrices. The analysis of the specific parameters, which includes the RMOs, is generally qualitative, but quantitative information is incorporated as much as possible. The Myrtle Creek and Snow Creek Bull Trout Matrices are located in the Fisheries Project File.

On pages B-56 through B-60 of Appendix B of the FEIS, the INFS Standards and Guidelines are disclosed, along with brief descriptions of how the project would meet the INFS standards and guidelines and would therefore "not retard the attainment of the RMOs".
As far as the contention that the Myrtle Creek and Snow Creek watersheds are more degraded than disclosed, the FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

For a very detailed description of Myrtle Creek, Snow Creek, Mack Creek and Cooks Creek, included quantitative data regarding the existing condition, refer to pages D-22 through D-56 of Appendix D of the FEIS.

Issue 6: (AQUATICS) *The EIS has failed to reasonably disclose the impacts of existing peak flow alteration on channel erosion, sediment transport, and bull trout. (Objection Item #19)*

Suggested remedy: *None given.*

Response: The FEIS describes, in detail, the existing impacts on channel erosion and resulting impacts on sediment transport and sedimentation (FEIS Chapter 3.3, Chapter 4.2). The FEIS discloses the likely future impacts on channel erosion and resulting impacts on sediment transport and sedimentation in the aquatics trend analysis tables (FEIS Chapter 4.2-K). The possible impacts to fish based on expected changes in water yield are discussed on page B-51 of Appendix B and in the Bull Trout Matrices located in the Fisheries Project File.

Issue 7: (Aquatics) *The EIS also fails to reasonably disclose that existing levels sediment delivery as estimated for several watersheds in the EIS are likely to increase the amount of fine sediment substrate. Although undisclosed in the EIS, at the levels of estimated sediment delivery, the model specifically developed to estimate change in fine sediment in response to sediment loads in northern Idaho (USFS, 1983), indicates that levels of fine sediment in streams will increase (Rhodes et al., 1994). The failure to disclose this is a significant omission because bull trout and westslope cutthroat trout are particularly sensitive to increases in fine sediment (USFS and USBLM, 1997a). Available information clearly indicates that for every increment of increased fine sediment, the survival of these two species is reduced (Weaver and Fraley, 1991). (Objection Item #20)*

Suggested remedy: *None given.*

Response: The FEIS does state that the proposed road work will increase sediment erosion, but not significantly. The FEIS also clearly states the increase will be immediate, short-term and within the capabilities of the watershed (FEIS Chapter 4.2-D.4, 4.2-E, 4.2-F, and 4.2-H); and the effects would not be detrimental nor permanent.

The EIS describes, in detail, the existing impacts on channel erosion and resulting impacts on sediment transport and sedimentation (FEIS Chapter 3.3, Chapter 4.2). The FEIS discloses the likely future impacts on channel erosion and resulting impacts on sediment transport and sedimentation in the aquatics trend analysis tables (FEIS Chapter 4.2-K).

Appendix B of the FEIS discusses the habitat requirements for bull trout and westslope cutthroat trout on pages B-43 and B-44, including their need for clean, clear streams. In the fisheries analysis on pages B-47 through B-54 and in the bull trout matrices located in the Fisheries Project File, the potential change in sediment delivery as a result of the project is disclosed. It is disclosed that sediment is likely to increase in the short term as a result of the proposed action, but that in the long term sediment delivery into project area streams is likely to decrease due to the reconditioning of roads, which includes redesigning and upgrading stream crossings, and road decommissioning as part the Myrtle HFRA project.

Also, as discussed on page B-54, B-55 and B-62 of Appendix B of the FEIS, based on the expected short term increase in sediment delivery to project area streams as a result of the proposed action, it is disclosed that there would likely be an impact on fish from the Myrtle HFRA project, which led to the effects determinations of "May Affect, Not Likely to Adversely Affect" bull trout and "May

impact individuals or their habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species" for westslope cutthroat trout.

Issue 8: (AQUATICS) *The EIS repeatedly asserts (e.g., p. 2-28) that INFISH Riparian Habitat Conservation Areas (RHCAs) effectively prevent measurable levels of sediment from activities reaching streams. These assertions are misleading for several reasons and fail to disclose the likely effectiveness of INFS RHCAs and the impacts of the alternatives, including sediment-producing activities within the RHCAs. (Objection Item #32)*

On non-fish-bearing streams, RHCA widths will only be 150 feet from the edge of non-fish bearing perennial streams and only 50 feet around intermittent streams (EIS, P. 2-28). The EIS fails to disclose that he USFS's own regional assessment, the Interior Columbia Ecosystem Management Project (USFS and USBLM, 1997a), determined that these widths are inadequate to protect these types of streams from increased sediment delivery from upslope sediment production. (Objection Item #33)

The EIS also fails to disclose that USFS and USBLM (1997a) concluded that 300 foot wide RHCAs that will be provided for fish-bearing streams in the MC project may not be adequate to prevent increased sediment delivery to streams. (Objection Item #34)

The EIS fails to disclose that other applicable scientific literature has noted RHCAs wider than those of INFISH are necessary to protect aquatic resources. Due to their sensitivity, distribution and locations, headwater streams need as much protection, or more, than larger downstream reaches, if aquatic habitats and water quality at the watershed scale are to be protected (Rhodes et al., 1994; Moyle et al., 1996; Erman et al., 1996; Espinosa et al., 1997). (Objection Item #35)

Suggested remedy: *Intermittent and non-fish-bearing streams should receive stream buffers significantly larger than those afforded by INFISH.*

Response: A description of the Riparian Habitat Conservation Areas (RHCAs) per the Inland Native Fish Strategy (INFS) and the estimated effectiveness is discussed on page 2-28 of the FEIS and pages B-56 through B-60 of Appendix B of the FEIS. The standards and guidelines specified in INFS for the purpose of protecting stream components are based on the best available science thereby "reducing the risk of loss of populations and reducing potential negative impacts to aquatic habitat" (INFS 1995). As referenced in the Idaho Panhandle National Forest Fry Emergence Environmental Assessment (USDA 2005), "a summary of forested streamside research over the last 10 years supports the science used to establish INFISH, with no known new science that contradicts the science used to develop the INFISH strategy (K. Overton, R1/R4/RMRS, Fisheries Technology Transfer Specialist, personal communication with Shanda Dekome, Forest Fisheries Biologist, 2005)". A large scale monitoring effort referred to as PIBO (PACFISH INFISH Biological Opinion) has been underway since 1998 to verify and insure that the management direction contained within INFS continues to adequately protect stream habitat.
In addition, the INFS Environmental Assessment: Decision Notice and Finding of No Significant Impact cited throughout the Myrtle HFRA FEIS states the following:

> Widths of the interim Riparian Habitat Conservation Areas that are adequate to protect streams from non-channelized sediment inputs should be sufficient to provide other riparian functions, including delivery of organic matter and woody debris, stream shading, and bank stability (Brazier and Brown 1973, Gregory et al. 1984, Steinblums et. al 1984, Beschta et al. 1987, McDade et al. 1990, Sedell and Beschta 1991, Belt et al. 1992). The effectiveness of riparian conservation areas in influencing sediment delivery from non-channelized flow is highly variable. A review by Belt et al. (1992) of studies in Idaho (Haupt 1959a and 1959b, Ketcheson and Megehan 1990, Burroughs and King (1985 and 1989) and elsewhere (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that non-channelized sediment flow rarely flows more than 300 feet and that 200-300 foot riparian "filter strips" are generally effective at protecting streams from sediment from non-channelized flow.

As stated in An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins (Quigley and Arbelbide 1997) referred to in the objection as USFS and USBLM 1997a, a review of literature indicates that a RHCA buffer width of 90 meters (295 feet) would maintain stream function from sediment inputs from non-channelized sources and should also be sufficient to provide for other riparian functions with a margin for error. These functions include litterfall/nutrient input and retention in streams, shade to streams for maintenance of summer stream temperatures, woody debris delivery and stream bank stability.

Because of the important role that RHCAs play in protecting aquatic resources, the width of RHCAs is a key component in the sediment erosion models that were utilized in analyzing the potential affect of the proposed activities on stream habitat. A

detailed description of each of the models utilized for the Myrtle Creek HFRA analysis is located on page 3-8 of the FEIS and page D-8 through D-12 of Appendix D of the FEIS.

To obtain the most accurate information from the models, each unit (e.g. Unit B1) was broken up into various hillslope/landscape components using GeoWEPP. The various input parameters such as soil type, forest type, rock content, etc. were then taken into account for each piece of the unit (e.g. Unit B1a, B1b). FuME runs were then conducted on each of these pieces and the results were weighted based on the percentage of the unit each piece encompassed. Each of these model runs and percentages were then compiled to get an overall estimate of sediment erosion from that unit as a result of the proposed activities. In each of these steps, the RHCA widths are factored into the modeling and in many areas where a more detailed analysis was needed, Disturbed WEPP and Road WEPP were also conducted and analyzed.

The results of the models runs, in conjunction with the model limitations/assumptions, site specific knowledge, field surveys and professional judgment, showed that although there would potentially be some sediment input as a result of the proposed action, none of the unit pieces or an entire unit is expected to input a level of sediment into a stream that would be considered to be detrimental or beyond the capabilities of the watershed. Table 4.24 on page 4-37 of the FEIS summarizes this information by stream with the increase in sediment above the existing condition ranging from one percent to five percent for the proposed action, with the majority of this increase attributed to a short term increase in sediment resulting from road decommissioning, culvert removal and the reconstruction of Forest Road 402C. Results of these model runs on each of the pieces are located in the Hydrology Project File.

Based on the above information, it was determined that the RHCA widths established for the Myrtle Creek HFRA project, which were based on INFS, were adequate to protect stream habitat and native fish populations from the proposed activities.

Issue 9: (AQUATICS) *The EIS fail to adequately disclose that sediment filtering capabilities of RHCAs within the project area have been significantly compromised by roads and logging, and that many of these areas act as sources of sediment to streams instead of providing sediment prophylaxis. (Objection Item #37)*

Suggested remedy: *None given.*

Response: The FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

In part because the road densities upstream have the potential to affect bull trout habitat below the natural barriers, road reconditioning, which includes redesigning and upgrading stream crossings, and road decommissioning to reduce road densities and the likelihood of sediment into project area streams is proposed as part the Myrtle HFRA project. The road reconstruction and reconditioning was discussed on page B-50, B-52, B-54 and B-57 through B-59 of Appendix B of the FEIS and also in Appendix C, Appendix D, Chapter 4: pages 4-22 through 4-24, Map Appendix page 14 and the Hydro Project Files.

For a very detailed description of Myrtle Creek, Snow Creek, Mack Creek and Cooks Creek, included quantitative data regarding the existing condition, refer to pages D-22 through D-56 of Appendix D of the FEIS.

Issue 10: (AQUATICS) *The EIS directly misleads regarding scientific literature that it cites to support its arbitrary contention that INFISH RHCA obviate concerns related to sediment delivery from upslope activities. The EIS repeatedly cites Reid and Hilton (1998) to support its arbitrary contention "…that when RHCAs are implemented during timber harvesting, sediment delivery to stream channels is 'not measurable' or 'is negligible'…" (EIS, p. 2-28). (Objection Item #39)*
The EIS further distorts the results of Reid and Hilton (1998) by failing to report that they found: "Thus, a total no-cut zone of at least 4 to 5 tree heights width would appear to be necessary if woody debris inputs are to be maintained at rates similar to those for undisturbed forested channels." (Objection Item #40)

These are significant failures, because the EIS's arbitrary assumption that RHCAs reduce sediment delivery to streams to negligible levels is one of the primary premises of the erroneous conclusions drawn in the EIS regarding the effects of the alternatives on streams, water quality, and imperiled fish and their habitats. (Objection Item #41)

Suggested remedy: *None given.*

Response: The citation of Reid and Hilton (1998) and Belt et al. (1992) within the Myrtle Creek HFRA FEIS were used to support the need for riparian area buffers. Reid and Hilton states that "riparian buffer strips provide an efficient and widely accepted way to help protect aquatic ecosystems and downstream values from the effects of upslope land-use activities", and more specifically that "riparian buffers are intended to allow natural interactions between riparian and aquatic systems to be sustained, thus providing some assurance that appropriate in-stream ecosystems, sediment regimes, and channel forms be maintained. Specific roles of riparian zones—particularly of riparian trees—with respect to the in-stream environment include (emphasis added):

- Maintenance of the aquatic food web through provision of leaves, branches, and insects
- Maintenance of appropriate levels of predation and competition through support of appropriate riparian ecosystems
- **Maintenance of water quality through filtering sediment, chemicals, and nutrients from upslope sources**
- Maintenance of an appropriate water temperature regime through provision of shade and regulation of air temperature and humidity
- Maintenance of bank stability through provision of root cohesion on banks and floodplains
- **Maintenance of channel form and in-stream habitat through provision of woody debris and restriction of sediment input**
- Moderation of downstream flood peaks through temporary upstream storage of water
- **Maintenance of downstream channel form and in-stream habitat through maintenance of an appropriate sediment regime"**

Belt et al (1992) states the following:

> "Appropriately designed and managed buffer strips can contribute significantly to the maintenance of aquatic and riparian habitat and the control of pollution. Riparian buffer strips fulfill at least three basic roles. First, they help to maintain the hydrologic, hydraulic, and ecological integrity of the stream channel and associated soil and vegetation. For example, vegetation contributes to the maintenance of stream bank stability and channel capacity. Riparian vegetation also contributes the large organic debris that provides hydraulic structure to the channel. Second, buffer strips help protect aquatic and riparian plants and animals from upland sources of pollution by trapping or filtering sediments, nutrients, and chemicals from forestry and agricultural activities. Third, buffer strips protect fish and wildlife by supplying food, cover and thermal protection, and in some cases providing unique habitat."

The citation of Reid and Hilton (1998) and Belt et al. (1992) within the sections discussing RHCAs on page 2-28, 4-22 and B-48, was included to support the need and general effectiveness of RHCAs, including reducing the likelihood of sediment input into project area streams for upslope activities (e.g. timber harvesting). The IPNF Forest Plan Monitoring Reports (USDA Forest Service 1999, 2000, 2001, 2002, 2003) cited in the same locations in the FEIS were used to illustrate that monitoring of past timber harvest projects on the IPNF that utilized the INFS RHCA widths have resulted in sediment delivery to streams that is "not measurable" or "is negligible".

Issue 11: (FISH) *The EIS fails to reasonably determine and disclose the alternatives likely impacts on bull trout, due to the numerous, significant defects in the EIS. As discussed, these defects included the unwarranted assumptions regarding RHCA effectiveness, the failure to reasonably assess changes in peak flows, channel erosion, sediment delivery, fine sediment levels and the impacts of the existing condition. All these factors strongly affect bull trout. As will be discussed in greater detail, the failure to reasonably disclose the likely impacts of the alternatives on fire behavior and resulting impacts also undermines the assessment of impacts on bull trout in the EIS. The EIS also fails to reasonably estimate changes in substrate under the alternatives and changes in salmonid survival, although the USFS has model to do so, which was developed for application in Idaho forests (USFS, 1983). For these combined reasons, the EIS does not adequately disclose the impacts of the alternatives on bull trout. (Objection Item #48)*

Suggested remedy: *None given.*

Response: As was discussed on page B-42 through B-47 and B-61 of Appendix B of the FEIS, bull trout distribution within the aquatics cumulative effects analysis area is very limited due to natural barriers by way of waterfalls in the lower portions of Myrtle Creek and Snow Creek. As a result, bull trout only have the ability to access approximately 4 miles of the over 82 miles of stream habitat (approximately 5%) within the Myrtle Creek and Snow Creek Watersheds with only approximately 1 mile of that occurring within the Myrtle Creek HFRA project area.

On pages B-42 through B-44 of Appendix B of the FEIS and in the Bull Trout Matrices located in the Fisheries Project File, the current condition of the bull trout population within the analysis area is discussed with many factors such as the existing roads, the presence of brook trout, stream channelization in the lower portion of the watersheds, natural migration barriers and a low population of bull trout within the Kootenai River cited as reasons for their limited numbers within the area of concern.

The bull trout matrices, which are based on the document *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* (USDI Fish and Wildlife Service 1998), were completed for Myrtle Creek and Snow Creek as part of the analysis process for determining the potential impact of the proposed action on bull trout. These matrices disclose the existing condition with respect to several habitat and population parameters and analyze the potential impacts on each from the Myrtle HFRA project, which was used to make a determination on the potential effect of the project on bull trout. This analysis was in turn part of the Biological Assessment that was presented to the Fish and Wildlife Service during informal consultation on bull trout, on which they subsequently concurred.

The Myrtle Creek and Snow Creek Bull Trout Matrices and the Fisheries Biological Assessment are located in the Fisheries Project File. The information from the matrices was incorporated into the FEIS throughout the fisheries analysis located on pages B-44 through B-56 of Appendix B of the FEIS.

Appendix B of the FEIS discusses the habitat requirements for bull trout on pages B-43 and B-44. In the fisheries analysis on pages B-47 through B-54 and in the bull trout matrices located in the Fisheries Project File, the potential change in sediment delivery as a result of the project is disclosed and it is disclosed that sediment is likely to increase in the short term as a result of the proposed action, but that in the long term sediment delivery into project area streams is likely to decrease due to the reconditioning of roads, which includes redesigning and upgrading stream crossings, and road decommissioning as part the Myrtle HFRA project.

As discussed on page B-54, B-55 and B-62 of Appendix B of the FEIS, based on the expected short term increase in sediment delivery to project area streams as a result of the proposed action, it is disclose that there would likely be an impact on fish from the Myrtle HFRA project, which led to the effects determination of “May Affect, Not Likely to Adversely Affect” bull trout.
More detailed and specific information regarding some of the contentions within this objection can be found within the responses to the other objections.

Objector: Kootenai Environmental Alliance

Issue 12: (FISH) *The fisheries analysis in the DEIS does not confirm that an additional 1,186 acres of logging in a already degraded watershed that has poor habitat quality will in fact result in compliance with ESA, NFMA, and IPNF Forest Plan regulations (Objection Page 16)*

Suggested remedy: *None given.*

Response: The analysis of the potential direct, indirect and cumulative effects of the Myrtle Creek HFRA project on stream habitat and the fisheries resource is discussed on pages B-47 through B-55 in Appendix B of the FEIS. The discussion regarding how the proposed action meets the requirements of the IPNF Forest Plan, NFMA and ESA is on page B-55 and B-56 in Appendix B of the FEIS. Compliance with the Forest Plan with respect to INFS is disclosed on pages B-56 through B-60 in Appendix B of the FEIS.

Appendix B of the FEIS also discusses the habitat requirements for bull trout and westslope cutthroat trout on pages B-43 and B-44, including their need for clean, clear streams. In the fisheries analysis on pages B-47 through B-54 and in the bull trout matrices located in the Fisheries Project File, the potential change in sediment delivery as a result of the project is disclosed and it is disclosed that sediment is likely to increase in the short term as a result of the proposed action, but that in the long term sediment delivery into project area streams is likely to decrease due to the reconditioning of roads, which includes redesigning and upgrading stream crossings, and road decommissioning as part the Myrtle HFRA project.

As discussed on page B-54, B-55 and B-62 of Appendix B of the FEIS, based on the expected short term increase in sediment delivery to project area streams as a result of the proposed action, it is disclose that there would likely be an impact on fish from the Myrtle HFRA project, which led to the effects determinations of “May Affect, Not Likely to Adversely Affect” bull trout and “May impact individuals or their habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species” for westslope cutthroat trout.

Additionally, the bull trout matrices, which are based on the document *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* (USDI Fish

and Wildlife Service 1998), were completed for Myrtle Creek and Snow Creek as part of the analysis process for determining the potential impact of the proposed action on bull trout. These matrices disclose the existing condition with respect to several habitat and population parameters (e.g. pool frequency, substrate conditions, subpopulation size) and analyze the potential impacts on each from the Myrtle HFRA project, which was used to make a determination on the potential effect of the project on bull trout. This analysis was in turn part of the Biological Assessment that was presented to the Fish and Wildlife Service during informal consultation on bull trout, on which they subsequently concurred. The FWS concurrence and rationale are within the Myrtle HFRA Biological Opinion located in the Wildlife Project File.

The Myrtle Creek and Snow Creek Bull Trout Matrices and the Fisheries Biological Assessment are located in the Fisheries Project File. The information from the matrices was incorporated into the FEIS throughout the fisheries analysis located on pages B-44 through B-56 of Appendix B of the FEIS.

Because the existing road densities within the project area have the potential to affect stream habitat and fish populations, road reconditioning, which includes redesigning and upgrading stream crossings, and road decommissioning to reduce road densities and the likelihood of sediment into project area streams is proposed as part the Myrtle HFRA project. The road reconstruction and reconditioning was discussed on page B-50, B-52, B-54 and B-57 through B-59 of Appendix B of the FEIS and also in Appendix C, Appendix D, Chapter 4: pages 4-22 through 4-24, Map Appendix page 14 and the Hydro Project Files.

In addition, because the IPNF recognizes that higher road densities are an issue within the Myrtle Creek watershed, we are actively working to decrease road densities. In fact, there is currently a contract to decommission approximately 15.5 miles of roads within the Myrtle Creek drainage based on the Myrtle Cascade EIS, which will decrease the road density and the ECA values within the drainage.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1: (FISH) *The FEIS also fails to comply with requirements under ESA and NFMA (including INFISH). Specifically, the FEIS fails to adequately evaluate or disclose the effectiveness of existing RHCA buffers that may have been compromised by past management, deleterious effects of logging within RHCAs and resultant impacts on Riparian Management Objectives (RMOs), and negative effects on Bull Trout. (Objection Page 3)*

Suggested remedy: *None given.*

Response: The FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

The EIS describes, in detail, the existing impacts on channel erosion and resulting impacts on sediment transport and sedimentation (FEIS Chapter 3.3, Chapter 4.2). The FEIS discloses the likely future impacts on channel erosion and resulting impacts on sediment transport and sedimentation in the aquatics trend analysis tables (FEIS Chapter 4.2-K).

As was discussed on page B-42 through B-47 and B-61 of Appendix B of the FEIS, bull trout distribution within the aquatics cumulative effects analysis area is very limited due to natural barriers by way of waterfalls in the lower portions of Myrtle Creek and Snow Creek. As a result, bull trout only have the ability to access approximately 4 miles of the over 82 miles of stream habitat (approximately 5%) within the Myrtle Creek and Snow Creek Watersheds with only approximately 1 mile of that occurring within the Myrtle Creek HFRA project area.

On pages B-42 through B-44 of Appendix B of the FEIS and in the Bull Trout Matrices located in the Fisheries Project File, the current condition of the bull trout population within the analysis area is discussed with many factors such as the existing roads, the presence of brook trout, stream channelization in the lower portion of the watersheds, natural migration barriers and a low population of bull trout within the Kootenai River cited as reasons for their limited numbers within the area of concern. The bull trout matrices, which are based on the document *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* (USDI Fish and Wildlife Service 1998), were completed for Myrtle Creek and Snow Creek as part of the analysis process for determining the potential impact of the proposed action on bull trout. These matrices disclose the existing condition with respect to several

habitat and population parameters and analyze the potential impacts on each from the Myrtle HFRA project, which was used to make a determination on the potential effect of the project on bull trout. This analysis was in turn part of the Biological Assessment that was presented to the Fish and Wildlife Service during informal consultation on bull trout, on which they subsequently concurred.

The Myrtle Creek and Snow Creek Bull Trout Matrices and the Fisheries Biological Assessment are located in the Fisheries Project File. The information from the matrices was incorporated into the FEIS throughout the fisheries analysis located on pages B-44 through B-56 of Appendix B of the FEIS.

Appendix B of the FEIS discusses the habitat requirements for bull trout on pages B-43 and B-44. In the fisheries analysis on pages B-47 through B-54 and in the bull trout matrices located in the Fisheries Project File, the potential change in sediment delivery as a result of the project is disclosed and it is disclosed that sediment is likely to increase in the short term as a result of the proposed action, but that in the long term sediment delivery into project area streams is likely to decrease due to the reconditioning of roads, which includes redesigning and upgrading stream crossings, and road decommissioning as part the Myrtle HFRA project.

As discussed on page B-54, B-55 and B-62 of Appendix B of the FEIS, based on the expected short term increase in sediment delivery to project area streams as a result of the proposed action, it is disclose that there would likely be an impact on fish from the Myrtle HFRA project, which led to the effects determination of "May Affect, Not Likely to Adversely Affect" bull trout.

Issue 2: (AQUATICS) *Thinning and subsequent slash treatments are proposed within INFISH-designated RHCA buffers. According to the FEIS, activities within units G2, G6, G7H, and G9 will occur in RHCA buffers. The FEIS makes the determination that these activities will not retard attainment of RMOs; however no site-specific assessment of RMOs is provided, and the potential for direct and indirect effects is not sufficiently addressed. Specifically, The FEIS does not indicate how, or whether, RMOs for woody debris, or other objectives are met. Further, the FEIS does not even attempt to make the argument that RHCA activities will help attain RMOs, as prescribed by INFISH where it states, "Apply silvicultural activities…where needed to attain Riparian Management Objectives." In addition, the opening of the canopy within RHCAs, and the resulting increase in solar penetration is not discussed as it relates to stream temperature. (Objection Page 16)*

Suggested remedy: *None given.*

Response: As discussed on page 2-28 and 2-29 of the FEIS, limited activities, including timber harvesting, would be allowed within some of the designated ephemeral draw RHCAs in Units G2, G6, G7H, G7S and G9, under the following restrictions:

- No ground based equipment within the RHCAs to prevent ground disturbance. <u>If</u> crossing one of these draws is necessary in order to reduce the need for multiple approaches of the road cut-slope to provide access for tractor skidding in Unit G6, the hydrologist would be consulted to determine the best location of the crossing, taking into account BMPs, topography, methods (e.g. snow road, log cribs) as appropriate.
- Hand felling and whole tree yarding would be allowed in the draws where a feller buncher cannot reach in order to reduce fuels within the draw.
- Only lodgepole pine and Douglas-fir less than 12 inches dbh would be removed.
- All ponderosa pine and western larch would be designated as leave trees because they are more fire resistant and western larch would continue to add needles annually to the RHCA organic profile.
- Underburning would be allowed only in the spring to allow for a moist soil mantle and to avoid the consumption of large woody material during the fire.

Although a description of the RHCAs in question is discussed on page B-50 of Appendix B of the FEIS, further clarification regarding these RHCAs might be beneficial. The RHCAs that would potentially have activities within them under limited circumstances do not typically contain surface water and have little to no evidence of above ground water flow. They can be best characterized as moist draws or depressions on the hillslope. During the development of the project layout, it was debated among members of the Interdisciplinary Team (IDT) whether or not these areas should actually be considered RHCAs or should just be treated as a moister portion of the units in question. However, in order to err on the conservative side and to afford these draws added protection it was decided to refer to them as RHCAs and restrict activities within them. During the development of the design features that would apply to these draws, several members of the Myrtle HFRA IDT, including the team leader, silviculturalist, two hydrologists, soil scientist, fisheries biologist and timber marking crew conducted two field trips, including one with a representative of the Idaho Department of Environmental Quality, to help insure that the right decisions were being made regarding the treatment of these draws. Notes from the field trips are located in the Fisheries Project File. It should also be noted that the allowable treatments only apply to draws that were designated during the field trips and all other RHCAs within these units would receive a minimum of a 150 foot RHCA buffer.

Because of the characteristics of the draws in question, the Riparian Management Objectives (RMOs) as described in the Inland Native Fish Strategy (USDA 1995) are not suitable management objectives. The objectives that the design features was designed around are based more on parameters such as maintaining the organic profile, severely limiting soil disturbance, retaining existing large woody debris and retaining the majority of the overstory.

The potential impacts on the temperature of project area streams from the Myrtle HFRA project are analyzed on page B-50 of Appendix B of the FEIS, the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the Project File. The RHCAs that would receive limited activities within them are specifically addressed with the conclusion that "These draws do not typically transport water above ground and given that, in conjunction with the fact that the majority of the overstory would be retained, the proposed activities in these draws would not affect water temperature". Stream temperature is also briefly discussed on page 4-33 through 4-35 of the FEIS, conveying that the project is designed to minimize impacts on stream temperature with some incidental shade reduction at stream crossing reconditioning sites possible, which is expected to maintain temperature within the TMDL.

Issue 3: (AQUATICS) *The FEIS and Fisheries BA are wholly silent on the effectiveness of existing RHCA buffers within the project area. According to the FEIS, the RHCA Equivalent Clearcut Area (ECA) is 15% and 7% for Myrtle and Snow Creeks, respectively. No discussion is provided on whether any of the logging units are adjacent to any of the ECAs, and/or whether the Fisheries Biologist or Hydrologist evaluated and documented this issue. (Objection Page 17)*

Suggested remedy: *None given.*

Response: As disclosed on page 2-36, 2-37 and 3-3 of the FEIS, the existing ECA value for the Myrtle Creek Watershed is 14% and for the Snow Creek Watershed its 6%, which are both below the 15% value discussed in the U.S. Fish and Wildlife Service's *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale* (1998) as "Functioning at Unacceptable Risk".

Consequently, on the Myrtle Creek and Snow Creek Bull Trout Matrices located in the Fisheries Project File, which is based on the USDI Fish and Wildlife Service 1998 document, the determination for the Disturbance History parameter, which is partially based on the ECA value is disclosed as being "Functioning At Risk".

The FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

Issue 4: (AQUATICS) *Further, the FEIS does not adequately factor in current RHCA road densities. This critical issue is directly proportional to the amount of sediment delivered to streams, as well as aquatic habitat integrity. The level of riparian road reconstruction is also of critical importance where sidecasting into streams and/or blading of roads within RHCAs may be proposed. Unfortunately, the FEIS fails to identify the location, intensity or proposals related to road reconstruction, so it is impossible to determine the potential level of impact. (Objection Page 17)*

Suggested remedy: *None given.*

Response: The location of road reconstruction and reconditioning was provided in FEIS-Appendix C, Chapter 4: pgs. 4-22 through 4-24, Map Appendix pg. 14, and the Hydro Project Files.

The roads issue, including its impacts, is addressed as a current existing condition (FEIS Chapter 3). It is stated that roads are the main contributing factor of human-caused erosion of the existing condition of the watershed. It is also stated that channel morphology has stabilized in most places and is currently able to maintain its dimensions, pattern, and profile; thus sustain its beneficial uses (FEIS Chapter 3.3).

The FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

The objection implies that there would be sidecasting of soils into project area streams from blading during road maintenance or reconstruction, which violates INFS. Item RF-2f on page A-7/8 of INFS states "For each existing or planned road, meet the Riparian Management Objectives and avoid adverse effects to inland native fish by avoiding sidecasting of soils or snow. Sidecasting of road material is prohibited on road segments within or abutting RHCAs in priority watersheds." This is addressed on page B-58 in Appendix B of the FEIS where it states that "no material would be sidecasted in priority watersheds". To further clarify, all road maintenance and road reconstruction proposed as part of the Myrtle Creek HFRA project would be designed and conducted in such a way that there would be no sidecasting of soils or direct input of soils into project areas streams.

Issue 5: (AQUATICS) *The FEIS fails to adequately consider the negative impacts associated with existing roads, road densities and ECAs with regards to hydrological function, water quality and Bull Trout. Specifically, the FEIS points to a "high risk watershed condition" threshold for road density of 3 mi/mi², where Myrtle and Snow Creeks are 2.6 and 2.0 mi/mi², respectively. The FEIS makes similar claims with regards to ECA, where Myrtle and Snow Creeks are at 21% and 25%, respectively. What the FEIS fails to mention is that these thresholds were identified in outdated Forest Plans developed prior to INFISH, prior to the listing of Bull Trout and other salmonids, and prior to the listing of area streams on the 303(d) list (FEIS, 3-14). (Objection Page 17)*

Suggested remedy: *Instead, the FEIS should rely on commonly utilized criteria for identifying watershed health, such as 15% ECA and 2.4 mi/mi² which were both identified as indicators of watershed "Functioning at Unacceptable Risk" in Section 7 Guidelines for Bull Trout: Matrix of Pathways and indicators (USFWS).*

Response: The roads issue, including its impacts, is addressed as a current existing condition (FEIS Chapter 3). It is stated that roads are the main contributing factor of human-caused erosion of the existing condition of the watershed. It is also stated that channel morphology has stabilized in most places and is currently able to maintain its dimensions, pattern, and profile; thus sustain its beneficial uses (FEIS Chapter 3.3).

The FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). The EIS clearly states "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), and also lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

The EIS also describes, in detail, the existing impacts on channel erosion and resulting impacts on sediment transport and sedimentation (FEIS Chapter 3.3, Chapter 4.2). The FEIS discloses the likely future impacts on channel erosion and resulting impacts on sediment transport and sedimentation in the aquatics trend analysis tables (FEIS Chapter 4.2-K).

As was discussed on page B-42 through B-47 and B-61 of Appendix B of the FEIS, bull trout distribution within the aquatics cumulative effects analysis area is very limited due to natural barriers by way of waterfalls in the lower portions of Myrtle Creek and Snow Creek. As a result, bull trout only have the ability to access approximately 4 miles of the over 82 miles of stream habitat (approximately 5%) within the Myrtle Creek and Snow Creek Watersheds with only approximately 1 mile of that occurring within the Myrtle Creek HFRA project area.

In part because the road densities upstream have the potential to affect bull trout habitat below the natural barriers, road reconditioning, which includes redesigning and upgrading stream crossings, and road decommissioning to reduce road densities and the likelihood of sediment into project area streams is proposed as part the Myrtle HFRA project. The road reconstruction and reconditioning was discussed on page B-50, B-52, B-54 and B-57 through B-59 of Appendix B of the FEIS and also in Appendix C, Appendix D, Chapter 4: pages 4-22 through 4-24, Map Appendix page 14 and the Hydro Project Files.
In addition, on pages B-42 through B-44 of Appendix B of the FEIS and in the Bull Trout Matrices located in the Fisheries Project File, the current condition of the bull trout population within the analysis area is discussed as being extremely low with roads along many other factors (e.g. the presence of brook trout, stream channelization in the lower portion of the watersheds, natural migration barriers and a low population of bull trout within the Kootenai River) cited as reasons for their limited numbers within the area of concern.
With respect to utilizing "criteria for identifying watershed health", the objection compares two distinct systems of analyzing watersheds, one used to describe the overall watershed condition and one used to describe the functionality of parameters with respect to bull trout. As discussed in detail on Page D-16 of Appendix D of the FEIS, the overall watershed condition can generally be determined to be "Properly Functioning", "Functioning-At-Risk" or "Not-Properly-Functioning" based on the information discussed in Appendix D of the FEIS.

Separately, based on the document *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Group Actions at the Bull Trout Subpopulation Watershed Scale* (USDI Fish and Wildlife Service 1998), several different parameters of a watershed affecting bull trout can be analyzed on a parameter by parameter basis in the bull trout matrix and determined to be "Functioning Appropriately", "Functioning At Risk" or "Functioning At Unacceptable Risk" to assist in an overall effects determination on bull trout.

Although the watershed health and the bull trout matrix have an unfortunate overlap in the names of their separate determinations (e.g. Functioning At Risk), they are not based on the same criteria and can not be used interchangeably. Consequently, if there were to be a determination on a particular parameter on the bull trout matrix of "Functioning At Unacceptable Risk", it would not translate into an overall watershed condition determination of "Functioning At Unacceptable Risk" because that determination does not apply to watershed condition. Furthermore, a "Functioning At Unacceptable Risk" determination on the bull trout matrix would not translate into a "Not-Properly-Functioning" determination for the overall watershed functionality because as stated previously the two systems are based on entirely different criteria and intended for entirely different purposes and do not directly affect one another.

As far as the contention that the FEIS "fails to adequately consider the negative impacts associated with existing roads, road densities and ECAs with regards to hydrological function, water quality and Bull Trout", the FEIS describes the existing watershed condition within the project area in great detail, particularly with respect to roads and past timber harvesting (Chapter 3.3). Not only does the EIS clearly state "The main contributing factor to human-caused sediment in the channels is from the roads on the landscape (FEIS Chapter 3.3, Chapter 4.2-H, Appendix D-8,D-9), but it lists the roads, their erosion risk rating, and road decommissioning priority (FEIS Chapter 3.3, Aquatics Map 3, 4, and 5). Discussions on the existing condition of the watershed can also be found in the fisheries analysis located on pages B-43 through B-47 of Appendix B of the FEIS, in the Fisheries Biological Assessment and in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

In addition, the bull trout matrices for Myrtle Creek and Snow Creek that are directly based on the USDI Fish and Wildlife Service 1998 document cited in the objection are located in the project file and fully disclose the determinations for all of the parameters discussed in that document. In USDI 1998, it is pointed out that "**the numeric values are not presented as absolutes nor to define data standards**" (emphasis in original). The criteria for determining the functionality call for bull trout with respect to the roads parameter is not solely determined by road density; as noted in the matrix, the location of roads is also a very important aspect to consider, with valley bottom roads posing the greatest threat to functionality.

Although the road density for Myrtle Creek (2.6 mi/mi²) and Snow Creek (2.9mi/mi²) are above the 2.4 mi/mi² suggested threshold for a "Functioning At Unacceptable Risk" determination, the roads within the watersheds in question are generally at mid-elevation locations outside of the valley bottoms where they would pose a greater threat. For that reason, along with the very limited use of the watersheds by bull trout due to natural migration barriers, the appropriate determination for the roads parameter is "Functioning At Risk", which is disclosed in the Myrtle Creek and Snow Creek Bull Trout Matrices located in the project file.

In addition, because the IPNF recognizes that higher road densities are an issue within the Myrtle Creek watershed, we are actively working to decrease road densities. In fact, there is currently a contract to decommission approximately 15.5 miles of roads within the Myrtle Creek drainage based on the Myrtle Cascade EIS, which will decrease the road density and the ECA values within the drainage.

See the response to Issue #3 with regard to the ECA portion of the objection.

C. FIRE and FUELS

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1 (FIRE) (Page 7)
The agency also repeatedly exaggerates the potential, size, and extent of a potential fire in the watershed and does not address adequately that forests have been altered due to years of fire suppression.

Suggested Remedy: None

Response: The potential type, size, and extent of fire burning in a treated landscape versus a non-treated landscape was modeled using fuels data and landscape data specific to the Myrtle Creek project area, as well as real world weather to present the potential intensities, rates of spread, and severity during the natural fire season (all this information is available in various sections of the fire modeling portion of the project file) – when fires pose the most resistance to control and have the potential to cause unwanted resource damage to the drinking water of the community of Bonners Ferry. The Myrtle Creek Fire in 2003 burned 3600 acres of which more than 2/3 was moderate and high severity. The severity of this fire left large areas of standing dead timber that will fall over and create the potential for a reburn where high intensities and severities could once again be realized. The fire behavior witnessed during the event is fresh in the minds of the people who experienced it – those individuals working on the ground attempting to suppress it, and the community members who felt the effects based on the fact they had to drink poor quality water. This fire provides insight into how a future fire could burn in the project area – in the Myrtle Creek Fire area as a reburn and especially where treatments are proposed in the area that burned severely in the 1926 fire (a fire that burned nearly 6,000 acres of the project area).
Many sections of the FEIS (including pages 3-33 and 3-47) address that forests have been altered by years of successful fire suppression, specifically in areas that have missed fire return intervals. The fact that fire suppression has been successful for several decades is one of the reasons a need for fuels reduction in the area exists.

Issue 2 (FIRE) (Page 11)
The FEIS fails to define "catastrophic fire" and exaggerates the degree to which it will occur across the landscape.

Suggested Remedy: *None*

Response: The term catastrophic is subjective and is not defined properly in Chapter 1 where it used starting on page 1-1; it is also referred to in the Watershed Hydrology section of Chapter 4 (page 4-9). It was not used in the Fire/Fuels analysis where intense or severe fires in the municipal watershed are referred to as "unwanted" fire and "uncharacteristic" fire (the term uncharacteristic used more for the dry forest types that have skipped fire intervals). Examples - page 3-43, paragraph 3; page 4-43, paragraph 2 under section 4.3; page 4-43 table 4.29; page 4-45 paragraph 2… "crown fires are considered 'unwanted' because the effects to water and soil resources…"

The term catastrophic can be defined as "a great and sudden calamity; disaster" in The American Heritage Dictionary of the English Language, 1969; or in Webster's as "a violent or sudden change in a feature of the earth." In Carey and Schumann 2003 (one of the objector's references), 'catastrophic fire' is defined in 3 ways: 1) Economic (the cost of damage), 2) Social (how it is viewed by the public), and 3) Ecological (biological effects of the fire). In this case, a wildfire in the municipal watershed may not be catastrophic from a biological perspective, but from a social, or even economic perspective (if the city does not have drinking water), a fire could be considered catastrophic (although the FEIS does not define this).

"Catastrophic" in reference to fire was a term developed by the Kootenai Valley Resource Initiative working group for the Myrtle HFRA project and used in one of the goals and objectives for the Myrtle Creek HFRA project, therefore it is likely referred to in Chapters 1 and 2; however "catastrophic" is not referred to in the fire and fuels analysis. The Forest Service developed proposed fuels reduction treatments from those goals and from that point referred to fuels reduction as meeting the following goals:

1) Reduce forest fuels
2) Reduce the risk and after affects of uncharacteristic and undesirable fires, especially crown fires
3) Restore stand composition and stand resilience to disturbances such as drought, insect and disease, and fire
4) Reduce the risk to life, property, natural resources, and wildfire suppression resources

In this case crown fire would be an unwanted fire which can often be a stand replacing event:

> FEIS page 4-73 paragraph 4 reveals SIMPPLLE modeling results that shows proposed treatments would reduce the risk of stand replacing fire in dry forest old growth stands by 62%, while the overall reduction in stand-replacing fire in all treated dry site stands is estimated at 54%. For moist, cool moist, and cold dry old growth the decrease is estimated at 11%.

Issue 3 (FIRE) (Page 11)
The FEIS inaccurately depicts fire risk and hazard and fails to address the success of fire suppression tactics.

Suggested Remedy: *None*

Response: FEIS page 3-47 refers to success of fire suppression. Also, page 3-31 and 3-32 under section 3.4-C.1 refers to the current condition of the fuels being caused by several factors including fire suppression. In addressing the fact that dry forest types have missed fire return intervals the FEIS states under Section 3.4-D.1 (d) that "Success in fire suppression has caused missed fire return intervals on dry forest types such as those that exist on southern exposures of Myrtle and Snow Creeks…". The most successful fire suppression tactics are direct attack tactics from the ground – referred to on FEIS page 4-63.
Fire Risk: The likelihood of an ignition occurring as determined from historical fire records.

Fire Risk in the form of a percent probability of fire on any given acre pre year across the landscape was not calculated for this project. The 1926 fire and Myrtle Creek fire in 2003 was evidence that extreme fire behavior and large fire growth is possible and does occur in this part of the Selkirks, as well as other data on fire history, provided enough determination of risk of fire. In addition, a map of fire occurrence is provided in the FEIS page 4-51 and includes 81 reported fires in the project area alone, not including fires adjacent that could spread into the project area, and these fires have occurred throughout the watershed on all elevations and aspects.

Fire Hazard is the availability of fuels to sustain a fire using modeling results in fire behavior predictions. Fire hazard, as shown repeatedly in the Fire and Fuels analysis of Chapter 4 is currently high and would remain without treatment. Pages 4-56 through 4-63 summarize the difference in fire hazard and expected fire behavior between the treatment alternatives. Where high fire risk and high fire hazard coincide, the likelihood of fire with unwanted effects is much more likely.

Issue 4 (FIRE) (Pages 11/13)
The FEIS does not disclose the inadequacy and inaccuracy of fuel and fire modeling.

Suggested Remedy: *None*

Response: Description of models used in the fire and fuels analysis, including limitations, capabilities, assumptions, outputs, etc. are available in the project file under section 'Fire behavior models' project file document FF_058.

Issue 5 (FIRE) (Page 11)
The FEIS does not adequately describe that the project could potentially aggravate fire intensity and fire severity and fails to disclose the ineffectiveness of the proposed treatments.

Suggested Remedy: *None*

Response: In addition to the information provided in the Fire and Fuels analysis in the FEIS, page 4-80 also eludes to the short-term risks associated with increased surface fuels prior to slash treatments and the possibility of increased fire behavior and severity during that time. Long-term risk however, addresses the fact that open canopy structure is less likely to support crown fires – which have the greatest fire intensities and fire severity.

The Fire Behavior Analyst on the Myrtle Creek Fire in 2003 (Ron Hvizdak), provided comments to Forest Supervisor Ranotta McNair on May 9, 2007and adds: the existing surface and ladder fuels will be treated through the project, even though the ground fuels may be exposed to more sun and wind. This will significantly reduce the intensities of a fire…keeping impacts to the watershed to a minimum. Fuel treatments are planned to be conducted within 1 year after harvest. Once completed, the hazards of harvest-generated fuel is greatly reduced or eliminated.

Issue 6 (FIRE) (Page 11)
The Forest Service has two conflicting goals with the project (reduce fire risk and restore ecological health partially through fire suppression). The FEIS overstates fire risk and overestimates the agency's ability to control extreme wildfire behavior (crown fire).

Suggested Remedy: *The forest must first prioritize safeguarding, to the extent possible, the homes and structures in the planning area before it undertakes the vast effort required to restore ecological health to the larger landscape*

Response: In response to the suggested remedy – there are currently no homes or structures to safeguard in the project are, thus the remedy is not applicable.

FEIS page 4-53 and 4-55 through 4-56 – crown fires exhibit a high resistance to control. The project will be designed to reduce the potential of crown fire through the treatment of surface, ladder, and crown fuels in the proposed treatment areas.

Professional Fire Behavior Analyst Ron Hvizdak addresses the fact that fires in fuel model 10 can easily transform into crown fires. The EIS was correct in the assumption that following treatment the Fuel Model would be converted from a Fuel Model 10 to a Fuel Model 8. In some stands however, the fuels will develop over time (1-5 years) to other Fuel Models such as 2, 5, and 9. A fire burning in these fuel models would have reduced intensities than a fuel model 10.

FEIS page 3-45 says "Fire is the major disturbance factor that produces vegetation changes in local forest ecosystems. Many ecosystems are regularly recycled by fire; life for many forest species literally begins and ends with fire." All forested ecosystems in this Northern Idaho have experienced fire and they all have a fire regime. Even in stands where project related activities may be referred to as restorative, it is not fire suppression that would accomplish such a goal. We do not suggest that fire suppression will at all, now or in the future, restore ecological health to our forests. Fire policy and the current forest plan direct fire suppression in specific locations, specifically the wildland urban interface as defined by the county CWPP – severe fires that impact water quality in the municipal watershed are unwanted events.

Issue 7 (FIRE) (Page 12)
The critical role that severe weather and steep topography play in determining fire behavior is ignored by managers because it cannot be controlled (Bessie and Johnson 1995; Carey and Schumann 2003:3). Also ignored are changes in fire susceptibility brought about by climate. Evidence suggests that western pine forests have alternated between surface and crown fires in response to climatic shifts from wet to dry for millennia (Pierce et al 2004; Whitlock 2004).

Suggested Remedy: *None*

Response: We agree that severe weather and steep topography play a critical role in determining fire behavior – fire managers are well aware of the role of weather and topography and do not ignore them – they are 2 critical factors as described in several sections of the fire and fuels portion of the FEIS, especially on page 4-49 and 4-52. Firefighter safety is the number one goal and priority during suppression of a fire, and weather and topography can strongly influence the safety of firefighters. The fact that weather and topography cannot be controlled by fire managers is one of the main reasons they do not ignore it. Fire suppression resources depend on site-specific and up-to-date weather information because it is critical to make assessments on their ability to control a fire and get work accomplished safely. Topography influences where firefighters will place safety zones and determine escape routes if fire behavior threatens them. Red flag warnings for high winds, low relative humidity, thunderstorms, high temperatures, etc. issued by the National Weather Service are taken seriously by all trained firefighters, due to the seriousness of weather on fire behavior.

The fact that severe weather plays such an important role in fire behavior is the reason that alternatives were compared and analyzed based on their effectiveness during the severe part of the fire season, when fires tend to show a high resistance to control.

The article by Whitlock 2004 is value-laden and does not appear to be scientific in nature or peer-reviewed. Pierce et al (2004) state that western ponderosa pine forests have recently experienced stand-replacing fires followed by erosion and sedimentation – the fires usually being attributed to increased *stand density. Their* article suggests that frequent low-severity fires were common in the past when cooler climates led to increased understory growth, however, warmer periods experience drought and therefore, more stand-replacing fires are typical. As the future brings warmer climates, it may promote more severe fires. They conclude that extreme droughts of multi-decadal lengths historically were associated with stand replacing fire events and large fire related erosion. Denser stands may have aided these severe fires – drought may have limited grasses and surface fires, allowing ladder fuels such as understory trees to survive. If this is the case, and the future brings continually warmer climates that lead to more severe fires being the norm, then treating dense stands seems to become all the more important in modifying fire behavior where these severe fires are not wanted – in the municipal watershed.

Issue 8 (FIRE) (Page 12)
The national FRCC rating system was not intended for localized use and finer input data is required to apply FRCC at finer scales other than the coarse-scale mapping (citing Schmidt et al 2002). The methodology used oversimplifies the complexity of an estimated percent departure from "natural fire regimes."

Suggested Remedy: *Finer input data required to apply FRCC at this scale*

Response: This remedy does not provide examples of the finer input data that should be used instead to apply FRCC.
The objector's are correct – the national mapping project (Schmidt et al 2002) was intended to provide national level data on the current condition of fuels and vegetation and is most useful at that scale.

The coarse-scale mapping was not used for localized use – none of the output data associated with the national mapping project was used. All FRCC analysis was done at the local scale with fine input data - data specific to the Myrtle HFRA project area was used to determine FRCC. FRCC evaluation is intended at the landscape scale and can then be evaluated further to the strata level or stand level (FRCC Guidebook May 2005 page 1-1). Landscapes are often at the 6th Hydrologic Unit Code or even 5th HUC (25k-100k acres in size). This analysis was done at the landscape level of approximately the 6th HUC of 28,000 acres. Site-specific vegetation and fire data was used in the FRCC analysis. The process is described starting on FEIS page 3-37 with additional process documentation available in the project file (doc. FF_039).

Issue 9 (FIRE) (Page 12)
The FEIS was inaccurate in using Rothermel's and Anderson's original 13 fuel models.

Suggested Remedy: *Either the FCCS (Fuel Characteristics Classification System – Sandberg et al 2001, Ottmar et al 2006) or the Scott and Burgan's 40 fuels models should have been used to model fire behavior in the FEIS.*

Response: An e-mail from Joe Scott (project file document FF_057) states that the original 13 fuel models are still applicable. The new 40 fuel models by Scott and Burgan are dynamic meaning the herbaceous load shifts between live and dead depending on moisture content. The original 13 are for the severe part of the fire season when wildfires pose greater control problems (Anderson 1982) which is how the alternatives were analyzed in comparison of one another and their effectiveness in treating the fuels. Using the original 13 may not be applicable when fire behavior is modeled outside the severe part of the fire season. It is appropriate to analyze the effectiveness of fuels treatments during high fire danger to account for a worst-case scenario for the potential of crown fires, the affect on fire suppression, etc. The Myrtle Creek Fire in 2003 is an example of fire initiating and burning through the hottest and driest part of the fire season...that is when fires are of greatest concern and pose the greatest threat to resources. On page 3 in Scott and Burgan (USDA Forest Service Gen. Tech. Rep. RMRS-GTR-153, 2005), they address that the original 13 fuel models are still applicable to fire behavior modeling systems that use the surface fire spread model. On page 4 of that document, it states that the original 13 will still be available.

Retired Fire Manager – and Fire Behavior Analyst – Ron Hvizdak adds that "the 40 fuel models have not been field tested by practicing Fire Behavior Anaylists long enough to fully determine their usefulness yet. At any rate, all fuel models (13 or 40) are intended to show relative potential fire behavior, not actual. This is especially true for planning purposes. The 13 fuel models have been time tested for this area and have worked very well."

Issue 10 (FIRE) (Page 13)
Rothermel's surface fire behavior model is the basic model used in the fire models for the analysis and it has severe limitations which the FEIS failed to disclose. The modeling is based on hypothetical fuel modeling data that contradicts on-the-ground information on fire behavior from the Myrtle Creek fire in 2003. FEIS Figure 3.2 predicts crown fire in areas during the 2003 fire. Predictions from NEXUS are not widely accepted as accurate and reliable.

> *Question: What are the limitations to the surface fire behavior model, is the fuel modeling data inaccurate, and does the fire modeling predict that the area burned by the 2003 Myrtle Creek Fire would burn as a crown fire now?*

Suggested Remedy: *None*

Response: Although some limitations of the fire behavior models used for analysis is available in the text of the FEIS (pages 4-45 through 4-48, specifically page 4-48 has general limitations), limitations on the surface fire behavior model is provided in the project file (FF_058). Also in the project file, is site-specific data gathered in the project area, including photographs and transects.

FEIS page 3-42, the only map showing the potential type of fire with the current condition (post-Myrtle Creek Fire in 2003) under periods of very-high to extreme conditions shows that the majority of the Myrtle Creek Fire area would burn as a surface fire. The Myrtle Creek Fire burned in a mosaic (Fire behavior report from Myrtle Creek Fire 2003 available in the project file document FF_015) and some stands may still have the potential based on their current composition and structure for fire to move into the tree crowns.

Most of the stands shown as having a potential for crown fire within the perimeter of the Myrtle Creek Fire 2003 are seedling in structure and were modeled correctly that way – these stands were modeled as likely showing similar fire behavior as a fuel model 5 – where brush, or these young seedlings in this case, are the main carrier of the fire. Intensities could be such as to carry a fire through the crowns of these young trees causing high mortality. Although it wouldn't be a crown fire in the sense

we typically envision because the overstory structure is missing, seedling/saplings still have crowns and due to the continuity of fuels could still burn as a "crown" fire.

Crown fire can include "passive" crown fire where individual trees or groups of trees torch out with small runs (page 4-53 paragraph 3 under 'Forest Fuels and Fire Behavior, Including Crown Fire Potential). "Active" crown fire is one that moves actively through the tree crowns.

Additional to predicting surface-crown fire spread and intensity, NEXUS computes indices for rating crown fire potential – the torching and crowning indexes – as shown on FEIS page 4-56. The relative fire behavior potential estimated from this system can be relied on. As compared to other crown fire modeling systems, NEXUS can be at fault for under-predicting crown fire potential. NEXUS falls in the middle of the crown fire modeling systems for predicting the incidence of crown fire and resulting spread rates (Scott 2006).

Issue 11 (FIRE) (Page 13)
The example given on FEIS page 4-56 refers to a canopy base height of 9.7' as "high". Wouldn't this be considered low to moderate as compared to a CBH of 20-40 feet?

Suggested Remedy: *None*

Response: The FEIS could have said "higher" rather than "high". This table (4.37) on page 4-56 seems to have led to some confusion in this objection point. The intent was to show that with the current fuels conditions, a crown fire may initiate even if the canopy base height were higher – at 9.7' – than they currently are, based on the surface flame lengths that would be predicted from surface fuel conditions. Yes, canopy base heights can average 20-40 feet in a stand where ladder fuels under the dominant overstory trees are not present (such as after fuels treatments that include the removal of the tree canopy and understory trees). The project file contains a map of the average canopy base heights across the project area as well as the fuel attributes, including canopy base heights used in the fire behavior modeling (doc. FF_072b and FF_077).

Canopy base heights were estimated based on field surveys in every stand proposed for treatment under Alternative 2. That information is available for review in the project file doc. FF_003 – however a good average for current canopy base heights from field data collected in these stands is 1 foot, based on the structure of the low growing tree crowns typical of late-seral species, as well as the abundant ladder fuels found in these stands.

Issue 12 (FIRE) (Page 13)
The FEIS does not provide the source or the kind of site-specific input data required for Behave Plus. It does not reference the Forest Service's protocol for using Brown's transects.

Suggested Remedy: *None*

Response: The data needed to run a basic surface fire module in BehavePlus is fuel model, 1, 10, 100 hour fuel moistures, live and woody moistures, midflame windspeed uphill, and slope. On page 4-52 of the FEIS: The source of the data used was weather on 08/30/2003 from the Bonners Ferry Weather Station #101001 which includes all of the above data except fuel model and slopes (used that weather because it summarizes high fire danger and weather conditions near the time of the Myrtle Creek Fire). Slopes vary throughout the project area, so a few different scenarios for slopes were modeled with all else being constant. The project file includes output files from each model that includes the inputs used in each scenario.

Issue 13 (FIRE) (Page 13)
The FEIS should include expected mortality to stands during wildfire and controlled fire.

Suggested Remedy: *None*

Response: The FEIS provides potential expected mortality on page 4-58 – Mortality predictions for before and after treatments in both dry and moist forest types.

In addition, past prescribed fire activities on the Bonners Ferry Ranger District provide good estimates of the mortality to expect from such activities, which is varies greatly depending on objectives of the burn. However, underburn mortality is generally in the vicinity of 10% sometimes up to 25%. On occasion, high mortality is an objective – such as in the whitebark pine restoration burn.

Mortality for large scale wildfires is generally much greater. For the Myrtle Creek Fire in 2003, approximately 1/3 burned with moderate severity and another 1/3 burned with high severity, thus mortality was between 10-90% on ~1,200 acres of the burn area and greater than 90% on approximately 1,200 acres.

Issue 14 (FIRE) (Page 14)
The FEIS failed to describe how the BpS's were determined and how they applied to the FRCC analysis.

Suggested Remedy: *None*

Response: FEIS page 3-38 discusses BpS's or Biophysical Settings. All processes related to determining BpS's and their applicability to the analysis are available in the project file (doc. FF_039, FF_051 through FF_055). The Interagency Fire Regime Condition Class Guidebook Version 1.2 released in May 2005 (page 2-3) describes Biophysical settings as the primary environmental settings used in determining a landscape's natural fire regime and fire regime condition class. When these are mapped in organized, repeating map units, they become biophysical units delineated based on the geographic area, physical setting, and vegetation community that can occupy the setting.

Issue 15 (FIRE) (Page 14)
The FEIS does not disclose what percentage of the watershed is not roaded, or previously harvested or burned. The FEIS does not describe the methodology used to calculate fire frequency in the area and if the analysis incorporates cultural, human caused burning, which would overestimate the average estimate.

Suggested Remedy: *None*

Response: Road densities are described on page 3-13 and 3-14 of the FEIS in Table 3.2 and in the text. Road densities in Myrtle Creek are 2.6 miles/miles^2, 3.1 mi/mi^2 in sensitive landtypes and 2.1 mi/mi^2 in the Riparian Habitat Conservation Areas. For Snow Creek – the densities are 2.9mi/mi^2, 3.0mi/mi^2, and 2.1 mi/mi^2 respectively. Both Myrtle Creek and Snow Creek have a moderate level of road densities (Moderate = 1.5-3.0 mi/mi^2)

Previously harvested areas are shown in the project file (FF-033). FEIS page 3-40 paragraph 3 describes the methods for determining fire frequency described in the FRCC guidebook on page 3-17. Further methodology described in the FRCC (FF_039) and site-specific fire history data collected and other information on fire history is available in the project file (documents FF_014 and FF_017).

Issue 16 (FIRE) (Page 14)
The FEIS does not specify which of the 81 fires recorded from 1941 to 2005 were suppressed naturally or by firefighting crews – without this knowledge decisions on fuel breaks, stand thinning, and access roads cannot be made correctly.

Suggested Remedy: *None*

Response: FEIS page 4-50 – suppression action occurred on all of these fire starts – suppression action by firefighting resources, not nature.

Issue 17 (FIRE) (Page 14)
The FEIS is misleading in fire risk - 2% of the 81 fires were larger than 10 acres.

Suggested Remedy: *None*

Response: The objector's connection on fire size and fire risk is misleading in that it shows just how successful fire suppression has been and that is really all. It tries to correlate low fire risk and small fire size. FEIS page 4-50 – Fire risk is defined as the likelihood of a fire start (81 starts over 63 years) – it is not related to how small fires were able to be kept due to success in fire suppression. Fire hazard is different in the fact it is defined as "the difficulty of controlling potential wildfire" (Brown, Reinhardt, Kramer 2003). Fires in the Myrtle Creek project area were generally able to be identified and suppressed rather successfully in the past. However, the Myrtle Creek Fire displayed for us how easy it is for a fire to escape initial attack and grow beyond the means of suppression resources and capabilities in just a short amount of time; especially in the wake of all those years of successful fire suppression and fuel build-up. The type of fire that would be expected in the Myrtle Creek

HFRA proposed treatment areas would exhibit a high resistance to control for suppression resources, similar to the fire in 2003, due to potential intensity and rates of spread. Fire hazard for the current condition is very evident based on the analysis done for the Myrtle HFRA project.

The success of fire suppression, however, does not allow us to see that had no action been taken on these 81 previous fires, many would have grown larger than 10 acres.

Issue 18 (FIRE) (Page 14)
Fuels reduction treatments are most effective in forests that historically burned frequently (citing Omi and Martinson 2004) – the objectors specifically refer to southwestern ponderosa pine forests (citing Allen 2002). The assumption that these (in Myrtle) types of forests burned frequently is misleading (Baker and Ehle 2001) and a landscape scale assessment is necessary. The objectors provide methodology:

Suggested Remedy (provided in their reference to Baker and Ehle 2001): *1) randomly choose stands for sampling to insure unbiased statistic validity; 2) determine if the sampled stand was subject to a crown fire, surface fire, or both; 3) take a large enough sample of fire-scarred trees in a contiguous area to be statistically valid and; 4) state the interval between fires as a range that includes the time from the tree's origin to the first fire scar.*

Response: There are several references in the FEIS regarding the variability of fire frequency in dry forest types in the project area. On page 3-33 the FEIS states, "For Myrtle Creek and Snow Creek the average (emphasis added) fire return interval on dry south slopes has been estimated at 38-40 year (Behrens 2003 and Zack 1994)." The fire history reference document in the project record [(OG(b)-07] discusses this variability. For example, the range of fire return intervals for the south slopes of Myrtle Creek was estimated at 17 to 74 years. Page 3-54 of the FEIS discusses the similarity of fire intervals in the project area as compared to similar forest types in the Northern Region.

Fire return intervals in forests that burned frequently –dry-site ponderosa pine and Douglas-fir – was determined for these forest types in the project area by the local silviculturist. Please refer to the documentation on the methods and findings available in the project file under 'Fire History' (document FF_014) and also mentioned on page 3-63 and page 3-33. The study by Baker and Ehle (2001) focuses "on nearly pure ponderosa pine forests, excluding mixed conifer forests sometimes referred to as ponderosa pine forests because of ponderosa pine dominance." It suggests a modern calibration be essential to verify fire history methods to be reliable for "quantitative paleoecological research", otherwise uncertainties and biases need to be considered and incorporated into the fire history results.

Baker and Ehle (2001) suggest that the impact of fire exclusion on ponderosa pine forests is not certain because of the uncertainty that surrounds mean fire intervals and fire rotations. However, surface fires were clearly an important process in these forests and there is plentiful evidence that fires have been excluded by human land practices and uses. They also suggest that the exclusion of surface fires has altered the structure in these forest types, since surface fires do readily kill the young, small trees. The study suggests that there would have been variability of forest structures across the landscape, which we agree with. From a landscape scale, these forests would not be characterized by 100% open ponderosa pine park-like conditions where surface fires burned on a strict interval of every 40 years. The documentation 'Fire History' (FF_014) goes into the variability. However, this type of structure – open ponderosa pine – was present and is departed from what was likely present across this landscape historically. The North Zone Geographic Assessment suggests that this stand structure was probably present on about 40% of the landscape, whereas now it is present on approximately 9% of the Myrtle HFRA landscape.

Issue 19 (FIRE) (Page 15)
The FEIS did not accurately disclose current and future fire risk associated with access and human-caused fire from roads. Objectors state that approximately 75% of fires occur along roadsides (a study from New Jersey). In Noss et all 1995 – humans cause 90% of wildfires – half of which are started from roadsides.

Suggested Remedy: *None*

Response: The study summarized is not applicable to this area – the majority of fires reported and suppressed on the Bonners Ferry Ranger District are lightning caused; >90% (FEIS page 4-50). Lightning is "the major cause of fires on western national forests…" (Agee 2003).

The FEIS did cover the potential increase of human caused fires on page 4-48 under 4.3-C b. Probability of Ignition: Implementation of a treatment alternative will not affect the likelihood of lightning strikes; however the risk of human caused fires may increase to some degree depending on how completion of the chosen alternative affects public access and use in the

area. Due to road decommissioning, risk of human caused fires may actually decrease in these areas. The fact that a risk exists is disclosed, but any increase is not measurable – 6% of the fires in the project area over the past 60+ years have been human caused. Because no new roads are planned for the project, I would only feel comfortable making the assumption that human caused fires will continue at about the same rate as the past.

Issue 20 (FIRE) (Page 15)
The FEIS attempts to mitigate for the increased risk of fire within slash piles in the project area, but fails to disclose the extent of increased probability of fire occurring in downed wood and slash.

Suggested Remedy: *None*

Response: The objectors are contradictory. First they state that the probability of fire occurring in the project area is nill – then they state that there is an increased probability of fire occurring in the downed wood and slash. There would be short time risk of ignition before the slash is piled and then before the piles are burned. Piles are generally burned the fall following when they are piled, so they would be on the ground less than a year. Considering this is a high priority project in the WUI and municipal watershed, treatments would occur in a very timely manner. Long-term benefits include fuels reduction in the surface, ladder, and canopy fuels that will need to be maintained into the future to protect the drinking water from negative impact associated with high-intensity fire.

Issue 21 (FIRE) (Page 15)
The FEIS fails to disclose how and to what extent buffering roads and limiting slash pile size will mitigate for the increased risk of fire.

Suggested Remedy: *The FEIS needs to address human-caused fires and provide a comparison between natural and human caused fires.*

Response: A comparison between natural and human caused fires is shown on FEIS page 4-50 table 4.33. The potential increase of forest visitors from access due to implementation is addressed on FEIS page 4-48; addressing the need for fuels reduction along open roads in the project area. Slash sizes was not addressed, but will be piled to minimize mortality to residual trees when the piles are burned. Piles will be burned in the following fall/early winter from when they were piled, mitigating the fire risk for the following fire seasons.

Issue 22 (FIRE) (Page 15)
The FEIS fails to disclose that proposed treatments are ineffective because it is impossible to fire proof fire-adapted ecosystems (the objectors cited Agee 1997 and Kauffman 2004).

Suggested Remedy: *Quoted from the objection page 15 "The principles of forest restoration require ceasing all activities that impair the ecosystem's ability to self heal" (DellaSala et al 2003). "Site-specific accountability is accomplished by understanding a stand's fire history and historic stand structure before proposing treatment" (Allen et al 2002: 1424; Brown et al 2004: 906).*

Response: The Forest Service agrees with the statement that fire adapted ecosystems cannot be fire proofed; nor should they be. FEIS does not suggest fire-adapted ecosystems will be fire proofed. I could not find Kauffman 2004 to review (titled: Death rides the forest…), however I did review Agee 1997 he states: "U.S. fire statistics show an alarming trend in wildfire acreage, primarily attributable to fuel buildups in western forests." "We have been sitting on a time bomb with little idea of how long the fuse is" (Agee 1997). He goes on to say that fire behavior has become increasingly predictable and that prescribed and natural fires have become working tools of today's fire mangers who have expanding land management goals including the protection of commercial timber, managing fuels around rural developments, and reintroducing and maintaining the natural role of fire. Fire exclusion over the 20th century has resulted in multilayered forests composed of shade tolerant species. When wildfire burn these forests now, more continuous and heavier, and three-dimensional fuel loads cause these fires to be of high severity (he shows a comparison of a ponderosa pine forest in western Montana – similar to the type of dry forests in the Myrtle Creek HFRA area – in 1908 then in 1948). These areas need to be broken up with fuel treatment, either by prescribed underburning, or by fuel break construction and in some cases commercial thinning can be integrated with the operation to reduce site biomass and smoke impacts resulting from fire. I could not find where he suggested fuels treatments such as those proposed would be ineffective because managers cannot fire proof fire-adapted ecosystems.

Fire behavior would be modified through fuels reduction activities. FEIS page 4-48 – Implementation of the treatment will not affect ignitions because fuels are not being entirely removed, just reduced. Open forest structure contributes to the maintenance of fire-dependent communities. Even with a fire start in the area, fires would exhibit slower rates of spread and lower flame lengths due to reduced surface and aerial fuels. In the case there is an ignition and resulting wildfire, spotting that accompanies crown fire would also be reduced because of modified surface, ladder, and crown fuels.

I could not find the Allen or Brown references in those provided by the objectors, but because of the very site-specific knowledge of fire history we have in these particular dry forest stands, we can assume that in part, successful fire suppression has led to conditions in dry forest types that will no longer allow these stands to burn with a lower severity fire that would have burned on intervals of approx. 40 years historically with mixed and higher-severity fire also occurring on occasion (Behrens 1999). By allowing the stand structure to develop that is currently observed in these stands, forest managers have removed these stands ability to "self-heal" without losing the ecosystem components – especially the large and sometimes old growth ponderosa pine – that developed with a natural fire regime. We can take away active management – but then expect to observe high-intensity, stand-replacing fire in these stands. Due to the impacts from fire analyzed and documented in the FEIS, that is not a responsible choice when dealing with the drinking water of several thousand citizens.

Issue 23 (FIRE) (Page 16)
The objectors suggest timber harvest can increase fire severity more than any other human activity if fuels reduction following is not adequate. Logging increases surface fuels thus affecting spread rates and fire intensity in and around areas harvested (from Final Report to Congress, Sierra Nevada Ecosystem Project 1996).

a. *The objectors conclude that some of the proposed fuels treatments will not reduce fuels at all and will actually increase fire intensity and spread.*

Suggested Remedy: *The objector's suggest that less treatment would mean less of an increase in fire spread and intensity.*

Response: We agree that logging increases surface fuels – if those fuels are not treated thoroughly post-harvest. If not treated, they would increase spread rates and fire intensity in and around the areas harvested. However, this project calls for proper treatment of surface fuels in all units, with prescribed underburning, except where the amount of fuels in relation to residual tree size would make mortality due to prescribed fire a concern. The issue of thinning and fuels reduction increasing fire behavior is addressed in multiple areas of the FEIS, specifically on page 4-52 (under the weather section) and page 4-53 under "Forest Fuels and Fire Behavior, Including Crown Fire Potential."

> "…unless the surface fuels created from these thinnings are treated, intense surface wildfires may result, negating positive effects of reducing crown fire potential. The best general approach for managing wildfire seems to be managing tree density and species composition with well-designed silvicultural systems that include a mix of thinning, surface fuel treatments, and prescribed fire" (Graham et al 1999).

Logging and leaving the slash residue increases fuels. Logging coupled with treatment of surface fuels, as would be the case with project related activities, addresses the temporary increase in surface fuels. Crown fires exhibit the greatest spread rates and intensities over surface fire. Project activities will essentially mitigate the likelihood of crown fire by removing the ladder fuels (which are currently abundant) and spacing the tree crowns (which are currently very dense and would support the spread of crown fire under even moderate conditions). The purpose of this project is not logging. The purpose of this project is fuels reduction, to mitigate the potential of unwanted fire behavior, such as crown fire, by treating fuels in all layers and therefore, reducing the overall intensities and rates of spread that would be expected by creating an environment where surface fire would be observed over crown fire. Thus, to say that intensities are increased through logging is not true, as the proposed activities will bring the fire down to the surface, where its behavior is far more predictable.

Issue 24 (FIRE) (Page 16)
The application of FARSITE was too limited to establish a need and location of fuels treatments.

Suggested Remedy: *None*

Response: FARSITE was not the only tool used to establish locations of fuels treatments, but it was used in the early phases of development as a visual tool for KVRI (collaborative group) to show how treatments could affect fire spread. Page 4-45 "It was used in the early analysis phase to assist in determining the need for hazardous fuels treatments…activity placement…" **Other factors dictated where treatment units were placed: private ownership, other past activities, the Myrtle Creek fire, areas of hydrologic concern, etc. Treatments were located based on how fires moved historically in**

the drainage and where fuels were heavy and continuous – modeling was effective in showing that the placement of treatments in these areas would be effective in modifying fire movement and behavior. FEIS page 4-45, 5th paragraph: FARSITE was used to show a comparison in potential fire growth between the alternatives (FEIS pages 4-60 through 4-62 show outputs of FARSITE).

The FARSITE outputs provided in the Map Appendix of the FEIS and on the pages listed above demonstrate how project activities on the south aspects west of the 2003 fire area in the Myrtle Creek drainage will slow fire spread and intensities. It also shows, how under the same scenario, when fire encountered untreated stands in the same location, how different the fire might burn and to what extent. FARSITE outputs also display fire data along the hypothetical fire perimeter of the scenario – fire data includes fire status, rate of spread, fireline intensity measured in BTU's, flame lengths, and heat per unit area measured in BTUs/ft^2. Heat per unit area helps describe the amount of heat released at the flaming front of a fire – the greater the heat being released, the more severe the effects to resources the fire may be.

Fire severity is related to how quickly the fuels are consumed and burn out – fire severity is generally greater with heavier fuels because they smolder for longer periods of time than fine, flashy fuels (FEIS page 4-50, footnote). This is critical for the "B" units on the mid-slope south aspects of Myrtle Creek that buffer 2 main sub-drainages in the watershed (Mack and Adverse Creeks). These types of stands, due to their composition and location on southerly would benefit greatly from fuels reduction activities as shown from fire modeling – including the FARSITE runs – not only to protect the stream channels they buffer, but also to buffer fires moving down drainage into the area previously burned by the Myrtle Creek Fire in 2003.

The Myrtle Creek Fire in 2003 burned in a mosaic, but a large portion of the south aspects burned intensely with high mortality in the residual overstory trees. What is left in many of these stands (field notes available in the project file – FF_006) is standing dead trees and flashy fuels on the surface. Eventually the standing dead trees will fall over creating a considerable fuel load – representing something similar to heavy slash – a reburn after this could be more severe than the original burn (doc. FF_155). An example of this is the Boundary Fire in 2000, which was a reburn of the 1988 fires in Yellowstone National Park. The reburn occurred on flat terrain and still burned with enough intensity to consume nearly all the fuels and leave bare soils (photos of before the burn with heavy down fuel which was the original mortality, and after the reburn occurred are available in the project file doc. FF_154).

Issue 25 (FIRE) (Page 16)
The FEIS does not disclose the structure of the stands that would be retained in the roadless areas (four units with openings ranging from 47-137 acres in size are just west of the Myrtle Creek Fire 2003 area). The proposed action would make these stands more susceptible to wildfire.

Suggested Remedy: *None*

Response: The structure of the stands post-treatment is discussed in the FEIS particulary on pages 2-14 and 2-15. Top of page 2-15, in general each prescription would remove trees that are about 10" dbh and smaller.

The issue that the proposed action would make stands more susceptible to wildfire is not supported by any scientific references and does not provide reasoning as to how the proposed action would make stands more susceptible to wildfire in these openings. Because these areas area in roadless, the increased risk of fire occurrence by human activities is likely not going to increase, at least in a measurable fashion. Probability of ignition, as described on FEIS page 4-48, with an ignition source present, may increase because ignition is dependent on fine fuel moisture, air temperature, and shading of surface fuels. However, if a fire does start in these areas, or if a fire were to move into these areas from another location, rates of spread, surface fire intensities, crown fire potential, and extreme fire behavior will be mitigated through treatment of fuels. A fire moving into these stands if left untreated would likely exhibit far different fire behavior, as described throughout the Fire and Fuels section of Chapter 4 analysis and in the modeling results available in the project file.

Issue 26 (FIRE) (Pages 16-17)
There is no justification for created openings, from a fire behavior perspective, that would be created from irregular shelterwood and group selection prescriptions, or scientific support for their location.

Suggested Remedy: *The objectors suggest that shaded fuel breaks with proper fuel treatments are the best at slowing the spread of wildfire by reducing the intensity and possibility of crown fire.*

Response: FEIS pages 2-14 and 2-15 – canopy cover would remain across all treatment units to maintain some shading. The openings will act as strategically placed fuel breaks.

Many of the openings that would be created from project activities will be done so in areas where root disease, insects, and other density or species related mortality is occurring. This mortality increase will only lead to an increase of surface fuels as the standing dead and dying trees begin to fall over.

Graham et al 1999 – "Seed-tree and shelterwood regeneration methods and all of their variations have the potential to reduce the severity and intensity of wildfires. Open stands with low crown bulk densities would not likely support a crown fire when the regeneration was short" – but the regeneration will need to be thinned to treat the ladder fuels that will develop. Depending on intensity, thinning from below can effectively change fire behavior by reducing crown densities, increasing crown base heights, and changing species compositions to lighter crowned and fire-adapted species.

Ron Hvizdak, retired Fire Behavior Analyst, states that the openings created in these types of prescriptions, where early seral, fire-tolerant species such as larch are planned for regeneration, are some of the best types of forest composition and structures for slowing the spread and intensities of wildfire and act as some of the best fuel breaks on the landscape. In addition, leaving more thin barked species that would otherwise be removed with these prescriptions would also result in more blowdown, negating fuel treatment benefits. More open stands in these habitat types aid in the regeneration of western larch, which is a very fire resistant tree species.

This photo shows how a crown fire spread into a larch regeneration unit during the North Fork fire in 1994 and the effect that unit had on fire behavior (the fire virtually stopped spreading in that unit). Due to the intensity of the fire moving through the crowns, it had no problem spotting above the road. Although it burned into the regeneration unit, it crept around until it was suppressed just inside the larch regeneration unit.

Issue 27 (FIRE) (Page 17)
The objectors question the scientific support for the location of the proposed fuel breaks on the landscape and feel that due to the Myrtle Creek Fire 2003 location and that it should be considered a "treated" area it should be adequate to stop or slow a fire and at least significantly reduce its intensity.

Suggested Remedy: *The Myrtle Creek Fire area would be adequate to stop or slow fire or reduce its intensity.*

Response: Within the area of the active timber sale (Mama-Cascade) the Myrtle Creek Fire behaved as an intense surface fire, staying on the ground because ladder fuels and tree crowns could not support a crown fire. However, outside of the cutting units, the fire behaved as a mixture of crown and ground fires, the **majority** being crown fire – where it easily climbed ladder fuels (Fire Behavior and Weather Report from the Myrtle Creek Fire 2003 project file document FF_015). The intense surface fire that resulted from the heavy slash that had not yet been treated with a prescribed underburn, killed nearly all of the residual timber. Had the fuels been treated with prescribed fire, this likely would not have been the case. Where the fire burned outside

of the timber sale, the dense stands w/ heavy ladder and surface fuels supported a crown fire w/rapid, upslope runs, killing much of the timber – similar fuels conditions before the fire as those we are trying to mitigate for with the proposed action. Many of the resultant stands on the south aspects are now a fuel model 2 – or grass fuel model where cured grassed would be the main carrier of a surface fire – and rapid rates of spread and higher surface fire intensities would be expected (FEIS page 3-36, table 3.9). Many of the standing dead trees in the post-fire area will begin to fall over creating a reburn potential that could result in high severity and intensities the next time it burns due to the large amount of down dead fuel. Surface fuel loads would then be higher than before the 2003 fire in some areas.

Priorities for fuel treatment areas are often due to limitation on the landscape such as local hazards, land ownership, accessibility, etc. (Finney 2001)…all of which were taken into account when prioritizing the treatment locations in the project area.

Issue 28 (FIRE) (Page 17)
The FEIS does not provide adequate scientific support for fuels treatments in moist stands.

Suggested Remedy: *None*

Response: FEIS 4-89 and 4-89 – Treatment in moist forest types (typical stand conditions where proposed shown in figure 4.13 (page 4-94) and after treatment figure 4.14 (page 4-95): "Although stand-replacing fire was a part of the natural processes that shaped the project area, this type of fire is not necessarily desirable in a municipal watershed. The proposed prescriptions will not reduce the risk of fire occurrence in the watershed, but they will create stand conditions that provide better opportunities for future managers to control structure and composition, which will in turn, reduce the risk in the long-term of that fire becoming a stand replacing event."

Comments from Dr. Mark Finney, research forester at the Rocky Mountain Research Station Fire Science Laboratory, addresses this issue as well in his report to the Forest Supervisor of the Bitterroot National Forest in reference to objections over mixed-severity stands chosen for treatment in the Middle East Fork HFRA project:

> "Since stand-level fuel treatment benefits of reduced wildfire severity under extreme weather conditions are increasingly proven (Pollet and Omi 2002, Graham et al. 2004, Finney et al. 2005), the challenge to managers is really to decide which stands are to be treated to achieve the greatest benefits with the limited resources available. The analysis performed by the FEIS was performed for the landscape [he is referring to the Middle East Fork FEIS, although it is applicable to this project] – a scale that is commensurate with the scale of the fires that inevitably will cause the greatest impact on environmental resources and human property. Individual areas may be excluded from consideration for treatment for various reasons (ownership, access, habitat etc.), but fire growth and behavior will not respect such distinctions unless the factors that influence burning (i.e. fuels and topography) physically change fire behavior. The choice of stands for treatment involves more than just the properties of the particular stand, but as research has shown (Finney 2001, Hirsch et al. 2001, Finney 2004), the choice involves the spatial juxtaposition of treatment units with respect to other units or landscape features that permit fire to move easily across the landscape and(or) facilitate containment (Bunnell 1998). Considering the entire landscape…helps identify treatments that improve stand-level resistance to fires as well as mitigate the movement of fires at the level of the landscape. The latter ultimately benefits WUI interests as well because suppression is improved for fires igniting throughout the landscape that otherwise could be in position to rapidly close the distance under extreme episodes of weather (Finney and Cohen 2003). The FEIS analysis identifies treatment areas as component members of a landscape that influence the movement of fires and would locally benefit from restoration/treatment. Thus, I find that the concerns over particular stands or types of forests are misplaced when real attention should be focused on the broad picture and the role that all areas of the forest offer for mitigating wildfire impacts."

Issue 29 (FIRE) (Page 17)
The objectors state that the Myrtle Creek Fire in 2003 burned in a mosaic fashion and do not feel a fire would move in a "blanket" fashion across the landscape as the FEIS predicts. In the Myrtle Fire 2003 fire burned with more severity in the harvest units.

Suggested Remedy: *None*

Response: The FEIS does not suggest that a fire would burn in a blanket fashion, but rather demonstrates the potential fire behavior that could be observed. The Fire and Fuels section of Chapter 4 in the FEIS describes untreated areas of heavy fuels generally having surface flame lengths greater than 4 feet, however, coupled with low canopy base heights a fire could easily

transition to a crown fire exhibiting greater fire intensity, severity and high rates of spread having a high resistance to control for suppression. The landscape is a mosaic of forest types and structures, however, the stands in the preferred alternative were selected based on the fire hazard they present due to fuel continuity, surface and crown fuel load, structure – as in low canopy base heights and canopy cover, as well as location in the project area.

The Myrtle Creek Fire Behavior Report is available in the project file (FF_015) for review and discussion of the way the fire burned in 2003. Ron Hvizdak, who wrote this report and was the Fire Behavior Analyst on this fire with more than 30 years of fire experience adds that "…you could definitely say that the 2003 fire exhibited higher intensity fire outside the harvest units with higher severity to the crowns of standing trees."

Issue 30 (FIRE) (Page 18)
The fuel models selected for analysis to represent the Myrtle Creek Fire 2003 burn area are not correct.

Suggested Remedy: *The objectors feel the 2003 Myrtle Creek fire is the most effective fuel break in the watershed and would best be characterized by fuel model TL1 (cited Scott and Bergan 2005) with low rates of spread and very low flame lengths.*

Response: The Scott and Burgan standard fuel model TL1 (Low Load Compact Conifer Litter) best describes a forest floor with light timber litter, generally compacted. On the productive north shaded slopes this may be true to a limited degree where the fire only crept on the ground. Over time, some of the stands and forest types that burned in the Myrtle Creek Fire may be able to be characterized this way as litter begins to build back up, although most currently are not. The majority of the 2003 burned stands in the Myrtle HFRA project area, specifically on the south slopes in the drier forest types, would not currently fit into this fuel model classification at all. Site-visits (photos available in the project file – FF_006) best characterize this burned area as a fuel model 2 which would crosswalk to a grass fuel type in the Scott and Burgan fuel models – most likely GR2. Timber grass and understory would have much higher rates of spread than the TL1 fuel model would likely exhibit under similar fire weather conditions. In addition, as much of the standing dead within the Myrtle Fire perimeter begin to fall over, these areas may resemble a fuel model that has heavy down fuels – a slash fuel type – where the reburn potential would need to be considered because high intensities and flame lengths would be expected if it did reburn (Comments by Ron Hvizdak – Retired Forest Service Fire Behavior Analyst – available in project file).

Issue 31 (FIRE) (Page 18)
The FEIS does not adequately describe why treating previously treated areas is necessary and how treating them again will be affective if they were not affective before. The other existing "treated" areas in the watershed will not be adequate to stop wildfire spread. During severe fire weather conditions, a fast moving wildfire can overwhelm nearly all fuel treatments (Graham 2003, Morrison et al 2000…).

Suggested Remedy: *None*

Response: The latter part of this issue – that other existing "treated" areas in the watershed will not be adequate to stop wildfire spread completely contradicts Issue 27 – that the Myrtle Creek Fire area is essentially treated and it should be adequate to stop or slow a fire and at least significantly reduce its intensity.

To first address this issue it is important to note that the previous "treatments" in the Snow Creek and Myrtle Creek Drainages that will be revisited for treatment with this project were not originally designed as fuels reduction projects. They were thinnings, roadside salvages, regeneration harvests, etc. Proper reduction in fuels, the ladder, surface and crown fuels will be implemented with this project.

Dr. Mark Finney also addresses this issue in response to objections to the Middle East Fork HFRA project:

"Fuel treatment benefits are known to lapse as surface fuels accumulate and stands change. Throughout most of the western US, we invest hundreds of millions of dollars annually (sometimes more) in attempting to exclude fire, and in the process are doing an excellent job of growing fuels and vegetation in preparation for the next fire (Arno and Brown 1989, 1991). For this reason there is a continual need for investing in measures to compensate for interruptions of fire cycles well beyond the timeframe of any existing planning framework (Agee 2002). This does not mean that all areas proposed for treatment will require some kind of mechanical re-treatment. In fact, a periodic landscape level analysis will be needed and will likely identify some areas to receive prescribed burning for maintenance of fuel and vegetation dynamics as well as new areas that, once treated, compliment the function of the existing landscape structure."

Therefore, even if these previous project had been fuels reduction projects, fuels continue to grow and accumulate and all areas of treatment with past projects would need to be evaluated for re-treatments – as will the units treated by this project.

The FEIS does not assume that treatments will "stop" wildfire spread. However, fuels treatments can slow rates of spread, especially when comparing the spread rate differences in a surface fire and crown fire. Treatments will nearly remove the possibility of crown fire occurring in treated stands by spacing tree crowns beyond the ability of fire to spread from one tree to the next, as well as removing the avenue for fire to move into the crowns in the first place (FEIS page 4-53 and 4-56 Table 4.36 – Torching and Crowning Indices). The idea being that a fire spreading from elsewhere will move down to the surface when it encounters these stands.

Graham (2003) suggests that the final perimeter of the Hayman fire showed that fuel-modified areas may have helped prevent further fire spread, but fuels treatments encountered during the largest run did little for decreasing fire severity. On moderate days there were several instances where fuels modifications appeared to have had an influence fire spread and severity. There is much to be learned from this case study, but the many of the fuels treatments done that were encountered during that fire were not similar to what is being proposed and the fuels and forest types are different as well.

Issue 32 (FIRE) (Page 19)
The Myrtle Creek Fire in 2003 is evidence of what can happen if slash on the forest floor is not treated after logging.

Suggested Remedy: *None*

Response: The objectors are correct – the logging slash from some of the units from the Mama Cascade timber sale had not been treated yet when the Myrtle Creek Fire in 2003 began. The slash that burned in 2003 was planned to be burned the following spring under safer conditions, but the fire started before the District had a chance to treat it. Alternative 2 (proposed action) and Alternative 5 both propose treatment of slash through underburning or pile burning. There is always a short-term risk in the time period from when the units are harvested and before the surface fuels are treated (FEIS page 4-54 under subheading 'Alternative 2'). However, there is already a risk of high intensity fire if an ignition occurs in these stands, before harvest, due to the existing surface and aerial fuels. Long-term benefits include reduced surface fuel loads, increased canopy base heights, and decreased canopy fuel loads once fuels are properly treated.

Issue 33 (FIRE) (Page 19)
The FEIS does not disclose that fuel treatments in moist forests are not consistent with restoring ecological health or more natural fire behavior. There is scientific consensus that higher elevation, moist forest types, have not been significantly altered by fire suppression.

Suggested Remedy: *None*

Response: See response to #28. Also, the goal of the project area is to reduce fuels to decrease the effects from unwanted fire – unwanted in the sense of fire effects on people and their drinking water from the municipal watershed. The fire and fuels portion of the FEIS does not refer to treatment on moist sites as being necessary to restore fire regimes or more natural fire behavior, and they likely have not been significantly altered due to fire suppression which is addressed on FEIS page 3-39. More open stands would have been present historically on the landscape. Moist sites typically burned with mixed to stand-replacing severity fires on a more infrequent basis than the dry-sites that would have created a variable landscape and treatments associated with the project are silviculturally designed to fall within the range of that variability ecologically. Irregardless, these stands are dense with heavy surface, ladder, and crown fuels that increase the likelihood of crown fire transition.

Issue 34 (FIRE) (Pages 19-20)
There is lacking evidence that mechanical fuels reduction – including thinning and fire – will reduce severity of fire (cited Carey and Schumann 2003, Graham et al 2004:23). The FEIS doesn't include reference to diameter cap limits and does not provide adequate before and after descriptions for "fuel reduction" treatments.

Suggested Remedy: *None – however, they say "Numerous credible investigators have consistently recommended retention of all large trees in restoration projects" (Allen et at 2002, DellaSala et al 2004 were two references cited).*

Response: There is a large amount of scientific evidence on the benefits of fuels treatments that include mechanical activities to reduce fire severity. FEIS page 4-53 paragraph 3 – the best general approach for managing wildfire damage seems to be

managing tree densities and species composition with well-designed silvicultural treatments that include a mix of thinning, surface fuel treatments, and prescribed fire (Graham et al 1999). Pollet and Omi (2002) – FEIS page 4-59 – demonstrate the effectiveness of fuels treatments in reducing wildfire severity in four ponderosa pine sites including one on the Kootenai National Forest. They found treated sites had lower fire severity than untreated plots, with sites mechanically treated reducing fire severity to a greater extent than sites where only prescribed fire was used.

Large trees will be retained with the silvicultural prescriptions designed for the Myrtle Creek HFRA project. FEIS page 2-14, 2-15 and 2-16 addresses before and after with a description on 2-16 Table 2.8. Paragraph 1 on page 2-15 discusses general diameters of trees that will be removed to be less than 10 inches dbh, to focus on larger tree retention.

Arno and Fiedler 2005 (pages 45-46) state that **removal of sapling and pole-sized trees in restoration efforts reduces the torching potential. However, removal of only the small diameter trees has little effect on canopy bulk density**. Treatments that remove some of the trees from the main canopy reduce the canopy bulk density and hence the crown-fire potential.

Scott and Reinhardt (in Powers 2007) found that due to a wide range of structures among stands, **removing trees to a diameter limit has no predictable effects on the characteristics of the stands canopy**. The method provides a "convenient" marking guide but is a poor prescription variable. Thus, when treating canopy fuels a diameter-limit harvest should not be used. However, a low thinning (removal of trees from the lower crown classes to favor those in the upper crown classes) can be marked as a diameter-limit cut if the stand structure is also taken into account. Flexibility in marking additional trees and specific areas needs to be available for site-specific factors. This is the approach the Bonners Ferry Ranger District takes, especially in dealing with project designed to restore fire to fire-dependent forest communities or fuels reduction projects.

The Carey and Schumann 2003 reference by the objectors was a review on the relationship between fuel reduction treatments and wildfire behavior, specifically the incidence of crown fire – it was a review of other studies fuels treatments. Their findings include: "A more limited number of studies addressed the effectiveness of a combination of thinning and burning in moderating wildfire behavior. The impacts varied, depending on the treatment of thinning slash prior to burning. Again, crown base height appeared as important a factor as tree density." Their recommendations include a notion that mechanical thinning, or a combination of thinning and burning, reducing the incidence of "catastrophic" fire should be a working hypothesis.

Issue 35 (FIRE) (Page 20)
The objectors state that empirical data, severe weather and topography, large-scale climate change, forest self-regulation, and non-density related influences all need to be considered for designing a restoration strategy because they all influence fire behavior.

Suggested Remedy: *None*

Response: Empirical data was used in the determination of project area fire behavior- evidence by material provided in the project file. FEIS page 4-52, 4-49 and page 3-33: Weather and topography are 2 of the 3 factors that determine fire behavior. Severe, yet real, weather conditions (generally 90th to 97th percentile conditions) and local topography (elevation, aspect, slope, natural barriers, etc.) were used in fire behavior modeling (available for review in project file – doc. FF_080).

Appendix A:

Declaration provided by Peter Morrison reference the fire/fuels analysis for the Myrtle Creek HFRA FEIS which was used to a large degree in Objection Number 07-01-00-1041.

Issue 1 (FIRE) (Appendix A #18, #21)
The FEIS eluded that no scientific uncertainty or controversy exists with regard to fuels treatments on the landscape. Only one side of the scientific controversy over fuels treatments was presented in the FEIS. Similar treatments as Alternative 2 created some of the conditions that led to the Myrtle Creek Fire in 2003.

Suggested Remedy: *None*

Response: See response to #23 in the objection by The Lands Council and others.

The FEIS does suggest that science exists to suggest not all forms of thinning treatments will reduce fire risk and hazard. FEIS page 4-53…Crown thinning that maintains multiple layers of the crown or individual tree selections will not reduce the risk of crown fires… Large fire development across landscapes can often be attributed to crown fires that move rapidly and include other extreme fire behavior such as spotting. Across the landscape, many opportunities for treating fuels do not exist at this point in time, even though fuels characteristics would warrant it, because of ownerships, moist site old growth, etc. The areas identified for treatment were done so based on their locations in the project area, fuels characteristics, and the benefit to the watershed of reduced fire behavior that will be expected once treatments have been implemented and are maintained.
I tried to review the science that seems to support Mr. Morrison's objection point, which suggests "thinning" to be a poorly understood method of reducing fire risk. However, even though cited in his declaration, they were not provided in the literature cited section at the end of his declaration.

The treatments that occurred from the Mama-Cascade timber sale were not fuels reduction treatments and that project was planned and implemented with a completely different purpose and need and proposed activities. However, activity and natural fuels would have been reduced with prescribed fire or piling and pile burning in those areas regardless, as that is standard for harvested areas on the Bonners Ferry Ranger District. Unfortunately, those slash treatment activities had not yet been completed in some units before the Myrtle Creek Fire in 2003 started. Those activities did not, however lead to the fire. An ignition occurred on the landscape when fire danger was high enough to cause spread – an ignition is what led to that fire.

Issue 2 (FIRE) (Appendix A #22)
The FEIS does not adequately address the issue of thoroughly treating the logging slash created by the proposed treatments in the chosen alternative. The FEIS calls for grapple-piling, but does not address burning the piles. Logging without immediate slash treatment increases fire risk.

Suggested Remedy: *Underburning after grapple-piling to properly reduce the fuels below existing condition.*

Response: FEIS page 3-36 – Many stands that burned in the Myrtle Creek Fire in 2003 were awaiting treatment of slash created as part of the Mama Cascade timber sale. Because the fuels were not treated, an intense surface burn caused high mortality in the overstory trees.

FEIS page 4-54 – One effect from implementation of Alternative 2 is increased surface fuels within harvest units in the short-term. These increases would increase the potential flame lengths and surface rates of spread before treatments are complete.
FEIS page 4-70 – Alternative 2 and 5 proposes to use fuels treatments such as thinning, lopping, slashing, piling, **pile burning**, and prescribed fire to help meet the goals of the management areas. In addition, page 4-66 table 4.43 and the paragraph at the bottom of this page address pile burning. Logging without immediate slash treatment will increase the fire hazard in the very short term (fire risk is associated with the likelihood of ignitions). **However, prescribed fire will take place during the spring following harvest**. This is typical, as harvest residue needs to cure several months to ensure more complete combustion and reduce smoke impacts. In addition, prescribed burning in the spring when soil and duff moistures are higher will reduce the impacts to the watershed compared to summer burning. The District is well aware of the hazards of leaving logging slash and has been aggressively treating it after harvests over the last 30+ years.

Some of the units that would be grapple-piled and pile burned rather than underburned, will be done due to the smaller size of the trees that will remain and other resource concerns if prescribed fire is put on the ground in those areas.
FEIS page 4-70 – Monitoring for fuels reduction activities will take place across the proposed treatment units. An evaluation of surface fuels, ladder fuels, and crown fuels will be done after completion of an action alternative to determine if fuels reduction has been accomplished.

Issue 3 (FIRE) (Appendix A #24 through #31)
There is much evidence, which the agency ignores, that commercial timber harvest may create a more hazardous wildfire situation.

a. *Fire weather in stands is related to the amount of canopy, thus fire weather in clearcuts may be 7 times greater in adjacent uncut timber (cited Morris 1941).*
b. *Opening of the forest canopy leads to increased temperatures of the forest floor affecting fuel moistures and also leads to increased winds into the open stand (cited Countryman 1955).*
c. *The agency ignores science as old as 30-years that focuses on the role logging has played in increasing wildfire risk in our forests (Wilson and Dell, 1971).*

The objections referenced studies to support this including: Mike Dombeck, Fire Management Today 2001, Wilson and Dell in the Journal of Forestry 1971, the Sierra Nevada Ecosystem Project 1996, a study of the Valley-Skalkaho Fire Complex in Montana that Morrison suggests has similar forest types as that of the Myrtle HFRA area.

Suggested Remedy: *None*

Response: *See response to #23 in the objection by The Lands Council and others.*

I reviewed one of the references – Dombeck 2001 in Fire Management Today – titled 'How can we reduce the fire danger in the interior west.' One of the major sections of the article was 'false prescriptions'. I think the objection alludes to this section to support the above issue of logging increasing fire risk. Dombeck says our role in fire management is being argued from all directions. To stand back and do nothing, as some groups would have it, is irresponsible because we've created these unnatural landscapes through successful fire suppression and past management. However, building more roads and harvesting more timber is not the answer either. This is because the type of harvesting we did in past decades focused on large diameter timber to fund the sales. This didn't address the fuels, thus adding to the fire hazard where these treatments occurred. He contends that commercial timber harvest alone cannot solve our problems of fuel build-up. I will not argue with that. This project focuses on removing or treating fuels in all layers, as fuels reduction projects should, but specifically the small-diameter trees over the larger trees to reduce the crown fire hazard and to address ladder fuels. In Dombeck's solution he states that small-tree removal can be a tool for restoring forest health. He states that fuels treatments do work. We are no longer prescribing timber harvests as was done in the past – removing large trees and not addressing small-diameter trees or fuels on the surface. This project will focus on reducing fuels in all layers.

Response to (a.): The proposed treatments are not clearcuts. Leave tree retention is planned for all units that will provide some shading and sheltering to the surface fuels.

Response to (b.): This issue is addressed in the fire and fuels section of Chapter 4 in the FEIS on page 4-52 under 'Weather.'

"Removing canopy fuels will reduce the moderating effect of canopy on wind speed, so surface winds will likely increase in treated units under the proposed action. Scott and Reinhardt (2001) address this issue:"

"The increased fuel-level wind speed coupled with increased insolation also leads to lower dead fuel moisture in treated stands during summer. These two factors tend to exacerbate surface fire behavior. However, properly executed treatments also tend to reduce the crown fire potential."

In the surface fire behavior modeling that was used for analysis of this project, such as NEXUS and BehavePlus, wind reduction factors were adjusted based on the amount of canopy expected in treated and untreated stands (inputs and outputs available in the project file – for NEXUS doc. FF_081) to account for the effect on wind. Archived weather data was used from the WIMS system from local weather stations, thus recorded temperatures were used and assumptions were not made on how much temperatures would increase at the surface based on a decrease in canopy.

Response to (c.): See objection responses to #23. The District is well aware of the hazards of logging slash. However, it is important to note that practices regarding the way stands are harvested have changed immensely over the practices from 30 years ago (emphasizing biomass utilization, no longer implementing large scale clearcuts, focus on removal of smaller diameter trees). This project will focus on removing small diameter timber over large diameter timber, as was often the case in the past, greatly reduced the amount of logging slash that will remain and needs to be treated after timber harvest (Agee 1997). In addition, the methods of slash treatment have become more efficient and thorough from what they were 30 or more years ago. This project is not a logging project based on timber volume – it is a fuels reduction project and natural and activity fuels will be "treated" (reduced) by way of project activities that include grapple-piling and underburning.

Issue 4 (FIRE) (Appendix A #32, #33, #34, #35)

The result of the USFS proposed treatments may actually increase fire activity and increase fire growth and intensity by 145% over if a wildfire encountered the uncut, untreated forests. Timber harvest prescriptions similar to that in the EA – "biomassing" and pile and burn or cutting and scattering and even commercial thinning with piling and burning of the piles – increase rates of fire spread by 14-74% over uncut stands (cited van Wagtendonk 1996).

#36, #45: Other scientific indications for commercial logging to have an adverse effect on fire behavior and wildfire risk (Perry 1998, Skinner and Weatherspoon 1996, Stephens 1998, Weatherspoon and Skinner 1996). Mr. Morrison's

professional opinion is that logging treatments planned for the Myrtle Creek HFRA project area will increase fire risk – not decrease it.

Suggested Remedy: *Less treatment area would equate to less of an increase in potential fire spread and intensity.*

Response: The timber harvest prescription described above does not say where and in what type of forest it occurs. The objection also does not state where the uncut stand referred to is located and what forest type, only that it is similar to those described in the EIS and it is untreated with high densities of understory trees and 50 years of fire exclusion.

Stands in the proposed treatment areas have at least 81 years of fire exclusion, which means many average 2 missed fire intervals.

Harvest prescriptions will not include commercial thinning w/cutting and scattering of slash as the method of activity fuels reduction. Where stands are thinned and piled with pile burning to follow, the ladder fuels and crown fire hazard will be mitigated (canopy base heights increased and canopy bulk densities decreased). Crown fires exhibit the greatest rates of spread.
FEIS pages 2-15 through 2.17 describes the activities that will occur by prescription.

The fact that logging will have an adverse affect on fire behavior is also addressed on FEIS page4-54 and in response of objection #23 under The Lands Council above.

However, I reviewed the van Wagtendonk 1996 reference provided by the objectors titled: 'Use of a deterministic fire growth model to test fuel treatments' and discovered that the study was on the effectiveness of fuels treatments in the Sierra Nevada ecosystems, which is a mix of much different species than the forests in the Myrtle Creek HFRA project area…however, the control stand had fuel characteristics, such as canopy base heights and canopy closures, similar to that of the current condition of many of the project area stands...and was even classified as a fuel model 10. The study used a fire growth model – FARSITE – to test the differences of fire behavior after fuel treatments – the study was not from on-the ground observed testing of fuel treatments. It used 95th Percentile weather observations which would be similar to what was used for the Myrtle HFRA project – simulating a very high fire danger. The prescribed burn simulation assumed complete removal of the understory, therefore, simulated subsequent fires would be less intense than what might occur under natural conditions. Also modeled were:

1. **Pile and burn**: removed 2 tons of live fine fuels per acre and eliminated ladder fuels up to 6 feet. The piles were then burned in the fall – a common practice in areas where it is thought to be too risky to use prescribed fire. **Does not include cutting or thinning in the upper canopy (this is not the same as what is proposed for the Myrtle Creek HFRA – canopy fuels will be addressed).**
2. **Cut and Scatter**: similar to pile and burn except tht the understory trees and branches are cut, lopped, and scattered over the treatment area. **Not prescribed for the Myrtle HFRA project.**
3. **Biomassing**: cutting, chippin, and hauling away of overstory trees up to a certain size – 50% of the overstory trees are removed. The surface fuels are not treated – removal of some understory trees but fuel depth and crown base height are assumed not to change. **Crown base heights will be increased with treatment in the Myrtle HFRA project.**
4. **Biomassing and prescribed burning**: involves thinning the overstory trees and canopies 50% and treating the remaining surface fuels with prescribed fire. Surface fuel loads decreased 50% and crowns raised to 6 feet. **Similar to most of the treatments prescribed for the Myrtle Creek HFRA project (1100 acres of treatment)**
5. **Biomassing and piling and burning**: Overstory thinning with cutting, piling, and burning of understory trees and branches (when moist). Increases crown base heights but does not *reduce* surface fuels. Somewhat s**imilar treatment as those areas in the Myrtle Creek HFRA project area that will be thinned then grapple-piled and the piles burned although it says surface fuels are not addressed. Piling as will be prescribed for the Myrtle HFRA project area will address natural surface fuels as well as activity fuels because slashing of brush, small diameter trees, and other material occurs before slash piling. That activity is not described in this study.**
6. **Biomassing and cutting and scattering**: 50% of overstory is removed and understory trees and branches are cut, lopped, and scattered. Surface fuel load and depth do not change. **Not prescribed for the Myrtle HFRA project.**

Results and conclusions: Treatment #4 as described above was a similar type of treatment that would be accomplished with the Myrtle Creek HFRA project – therefore, those are the only results compared here to a control stand (or similar to our 'No Action'). The biomassing and pile and burn would be similar if a large portion of the surface fuels had been addressed. The fact that they were not revealed fire behavior in this study that would be much greater than what would be likely in the Myrtle

HFRA project area where piling and burning of the piles after harvest will also address surface fuels, not just activity fuels. Prescribed fire only is also summarized:

1. Fire burning in the control stand (similar to our fuel model 10 in the project area) spread quickly upslope, aided by torching trees, spot fires and crowning, finally covering a total of 1,023 acres (after 24 hours of burning). The control stand had surface flame lengths of ~4 foot vs. ~2 foot for the biomassing with prescribed fire and heat per unit area was 3.5 times greater in the control. **Fire burning in the Biomassing with prescribed fire treatment did not burn the crowns and final fire size was 860 acres.**
2. The prescribed-burning treatment and the **biomassing with prescribed –burning treatment (similar to what is prescribed for approximately ½ of Myrtle HFRA) had the lowest values for heat per unit of area – no crowns were involved in the subsequent modeled fire**.
3. Fire behavior with fuel breaks was modeled: the control stand took 2.5 hours to reach the break, the biomassing with prescribed fire took 20.5 hours to reach the break. The control stand exhibited spotting approximately 270 feet beyond the break, the biomassing with prescribed fire did not.
4. "The key mechanisms at work that affected the results of the simulations were the amount of surface fuels and the presence of low crowns or ladder fuels. If there is insufficient fuel on the ground either to cause the fire to spread quickly or to generate enough heat to move it into the crowns, sufficient time will be available either to suppress the fire or to use a fuel break ahead of the fire." "Scenarios that did not treat surface fuels…did not appreciably change fire behavior. Adding additional fuels…exacerbated fire behavior."
5. "Prescirbed burning appears to be the most effective treatment for reducing a fire's rate of spread, fireline intensity, flame length, and heat per unit area." However, **"removing a portion of the canopy has the obvious effect of reducing the chance of a crown fire with or without surface fuel treatment. A management scheme that includes a combination of fuel treatments in combination with other land-management scenarios is critical for successfully reducing the size and intensity of wildfires."**

I agree that treatments that include the use of prescribed fire following mechanical treatment is the best approach over just mechanical treatment alone.

The Sierra Nevada is a different type of ecosystem than found on the Bonners Ferry Ranger District – specifically those found in the Myrtle Creek HFRA project area. Prescribed fire only was found to be the most effective treatment for reducing subsequent wildfire behavior in the Sierra Nevada's. However, prescribed fire only in these local forest types presents an incredible amount of issues and constraints:

1. Fuel breaks would have to be established throughout the project area. These fuel breaks are ground disturbing and would have to be accomplished at an incredibly high cost.
2. The safety of the burning crew and public would be put at risk trying to burn crown fire environments that have to be controlled at some designated line.
3. Continual mop-up and patrol would be necessary as the season progresses

Issue 5 (FIRE) (Appendix A #37-#42)

Relevant Lessons from the Hayman Fire – Hayman Fire Case Study 2003. Graphs were provided on how various forms of "fuels treatments" affected the behavior and fire effects of the Hayman Fire. One graph showed treatments prior to 1990 and one showed treatments after 1990. The only treatment that positively affected fire behavior during the Hayman Fire was prescribed fire.

During large scale high-severity fire, like the Hayman fire, climate and weather are the driving forces rendering fuels treatments essentially irrelevant (cited Bessie and Johnson 1995, Carey and Schumann 2003, Flannigan and Wotton 2001, Graham et al. 2004, Martinson et al. 2003, Pierce et al. 2004, van Wagtendonk 1996, Whitlock 2004). The Cheesman Thinning project in the municipal watershed was overwhelmed by the fire (Graham 2003).

Suggested Remedy: *None*

Response: It is important to note that the authors of the Hayman Fire case study allude to the effectiveness of the prior treatments with a forewarning: most of the management activities that affected the Hayman Fire were not considered fuels treatments but were implemented for other objectives (Hayman Fire Case Study – Graham 2003, page 98). I agree that the case study shows the positive effects of prescribed fire treatments. The Myrtle HFRA project proposes to use prescribed fire as a tool for fuels reduction. Mechanical treatment will also be used to help treat fuels in the ladder and crown fuels. Mr. Morrison refers to all forms of treatment in the case study as fuels treatments and that is not the case. Also, in the examples of treatments that illustrate burn severity that he provides in his graphs, none are the same as what is being proposed in the Myrtle HFRA project area. Most either only address the canopy fuels with no concern over the ladder fuels or surface fuels or they address

the surface fuels but not the ladder or canopy fuels. The proposed action will space the tree canopies thus reducing canopy bulk densities, remove ladder fuels thus addressing canopy base heights, and reduce surface fuels that include current fuels and activity fuels added.

In the Hayman Fire Case Study: continuous surface and crown fuel structure, both horizontally and vertically, in many ponderosa pine and Douglas-fir stands rendered them susceptible to torching, crown fire, and ignition by embers, even under moderate weather conditions.

In the Hayman Fire Case Study page 96, "…fuels treatments did not stop the fire but did in many cases change fire behavior and effects." "Fuels treatments can be expected to change fire behavior but not stop fires from burning." FEIS also addresses this on page 4-48 – regardless of the alternative chosen, ignitions (and fires) would still be expected because the fuels will be reduced, but not removed completely.

The Cheesman Ridge thinning project referred to in the objection was a small fuel break of only 51 acres and spotting breached the narrow treatment. Fuel breaks effectiveness on fire spread is also addressed in Issue 4 on the previous page. No fuels treatments were encountered by the fire when the fire was small. However, "fuel treatments may have been more effective in changing fire behavior if they had been encountered earlier in the progression of the Hayman Fire before mass ignition was possible" (page 14 Hayman Fire Case Study – Graham et al. 2003).

Graham et al. 2004 – Some studies have determined that surface fire intensity and crown fire initiation were constrained by weather rather than fuels, while crown spread was slightly more dependent on fuels. Indicating that the relative influence of weather and fuels vary as a function of the specific biophysical conditions.

Page 4-53 paragraph 3 also refers to the necessary actions needed for fuels treatments to be successful.

In addition – Omi, Martinson, and Chong (2006) in Effectiveness of Pre-Fire Fuel Treatments – a Final Report by the Joint Fire Sciences Program Project 03-2-1-07 – find that the effectiveness of fuels treatments depends on the type of treatment. Treatment that included reduction of surface fuels were generally effective, but thinning followed by slash treatment produced the best results. Thin only treatments were generally ineffective and in some cases produced greater fire severity than adjacent untreated stands – the study included the Hayman Fire in 2002, 2003 Aspen Fire, 2003 Davis Fire, 2004 Power Fire, and 2004 Fischer Fire. This project does not propose any thin-only prescriptions.

The objectors state above that **During large scale high-severity fire, like the Hayman fire, climate and weather are the driving forces rendering fuels treatments essentially irrelevant** and cite Carey and Schumann (2003) along with others. Carey and Schumann (2003) state that topography and weather play an important role in determining fire behavior – which the FEIS addresses in several locations (pages 4-49 and 4-52) – and states that steep slopes or high winds may make fuel reduction efforts ineffective. The very next sentence in the study (Carey and Schumann 2003:3) states: "Nonetheless, since topography and weather cannot be managed, most fire hazard reduction efforts focus on modifying the fuel load." **The authors also state in their findings that the literature leaves little doubt that fuels treatments can change the behavior of a fire**. Therefore, distance from the ground to the base of the tree crown, as well as dead material and surface material play a key role in fire behavior. This project proposes to treat all those layers and types of fuels.

Issue 6 (FIRE) (Appendix A #43, #46)
The project does not account for the unpredictable nature of wildfire and fails to account for areas previously treated, burned by wildfires and roads that currently act as fuel breaks, including the Myrtle Creek Fire in 2003 – the most effective fuel break in the project area.

Suggested Remedy: *None*

Response: Past treatments were considered in modeling as shown in figures 4.5 – 4.7 pages 4-60 through 4-62. Vegetation attributes that include previous treatments are available in the project file (doc. FF_032).

According to the Myrtle Creek Fire 2003 Fire Behavior Analysis (Ron Hvizdak) – the Myrtle Creek Fire area would be ineffective as a fuel break on the landscape. The idea conflicts with their concern in Issue 3 from Morrison – open stands allow more drying of the surface fuels and increased wind to aid fire spread. Hvizdak adds - The Myrtle stands are very open in places. The benefits of the 2003 fire area are short-lived as there are abundant fire-killed trees that will create heavy fuel loads that will be exposed to sun and wind. We are already seeing these fire killed trees fall to the ground. When these heavy fuel loads burn in the next fire, the impacts to the watershed could be more severe than the original fire to high intensity and long duration of burning from the heavy fuels (project file doc. FF_155).

During extreme fire behavior that includes torching, crowning, and spotting, roads would be extremely ineffective fuel breaks for stopping the spread of fire. On June 5, 2007, when fire danger was assumed low, a wildfire started approximately 100 feet below a paved two-lane road on the west side of the Bonners Ferry Ranger District, approximately 2 miles north of the Myrtle Creek HFRA project area. This fire was burning in a closed canopy moist site, similar in fuels to that of many stands proposed for treatments in the Myrtle HFRA treatment area. In 100 feet of spread the fire completely consumed the fuels below the 2-laned paved road and jumped it, burning the stand above and growing to nearly 5 acres in less than an hour before fire crews controlled it.

Using the science referenced by Mr. Morrison – van Wagtendonk 1996 – "It is obvious from this simulation project and from actual experience that fuel breaks alone will not alleviate the spread of wildfire. Although fuel breaks can form effective barriers to a fire during suppression action if they are cleared of all flammable fuels and they are wide enough, the time available to defend them is critical to their success. This time can be greatly increased if adjacent fuel treatments are accomplished beforehand."

Issue 7 (FIRE) (Appendix A #49, #50, #51)
The incorporation of large created openings as part of some of the prescriptions (Units B1, B4, B5, and B6) is not beneficial from a fire-hazard risk reduction perspective. The reproduction of trees in these openings contributes to severe fire behavior.

Suggested Remedy: *It is better to create shaded fuel breaks (which treat slash and surface fuels through prescribed fire).*

Response: It is important to try to maintain some shading. FEIS page 2-14 – canopy cover will remain across all treatment units, the lowest averaging 25-35% residual canopy cover where a mosaic harvest prescription is applied. FEIS page 2-15 – these openings are strategically place fuel breaks that are an integral part of the fuels reduction strategy in the project area. In addition, the openings are part of a silvicultural system designed to maintain a persistence of mature ponderosa pine and Douglas-fir – these prescriptions will create a mosaic of openings and more closed areas too. In addition to these dry site prescriptions, treatments in moist sites will provide necessary openings for more fire-resistant western larch to establish. Ron Hvizdak states that stands of western larch reproduction are some of the most fire-resistant forested stands in this region. Graham et al 1999 – "Seed-tree and shelterwood regeneration methods and all of their variations have the potential to reduce the severity and intensity of wildfires. Open stands with low crown bulk densities would not likely support a crown fire when the regeneration was short" – but the regeneration will need to be thinned to treat the ladder fuels that will develop. He also adds: Depending on intensity, thinning from below can effectively change fire behavior by reducing crown densities, increasing crown base heights, and changing species compositions to lighter crowned and fire-adapted species.

Issue 8 (FIRE) (Appendix A #52 - #55)
The location of treatment areas presented in the FEIS within the project area is without a well-substantiated basis.

Suggested Remedy: *The Myrtle Creek Fire in 2003 is effectively treated and spans the lower portion of the watershed. It would subsequently slow the spread of fire from the east; there is little added by the treatment units that border the 2003 fire. Fires that start within the perimeter of the Myrtle Creek Fire in 2003 would quickly burn out or spread slowly enough that fire suppression would be easy to achieve.*

Response: This is responded to in Issue 6 above. Ron Hvizdak comments refuting that the Myrtle Fire 2003 is a good fuel break (project doc. FF_155): The planned units will work extremely well in preventing an unwanted fire from reburning portions of the 2003 fire. There remains a significant amount of dead standing trees within the perimeter and at some point these dead trees will fall and create tremendous fuel loads. Since most of these stands are on a southerly exposure, a fire entering these stands will burn with high intensity, possibly impacting the watershed again.

The location of treatments was determined through many meetings with the local collaborative group (KVRI). Much of the upper reaches of the district dropped from the possibility of treatment first off due to private ownership, moist site old growth, and other issues. The Myrtle Creek Fire area was another large area in Myrtle Creek not looked at for this project. Because of the way fire has historically moved through these drainages in the Selkirks – fires move north – south aspects of Snow Creek were considered a high priority for treatment in order to slow the spread from a fire moving into Myrtle Creek. The south aspects of Myrtle Creek just west of the fire perimeter were also considered a priority because these stands have not burned since 1926. The unit placements on the north aspect of Myrtle Creek tie together previous treatments and the treatments proposed in Snow Creek and on the south aspects of Myrtle Creek.

Issue 9 (FIRE) (Appendix A #56-#63)

Modeling: The FEIS uses outdated fuel models which have been superseded by the 40 developed by Scott and Burgan in 2005. The fire behavior analysis in the FEIS is based on hypothetical fuel modeling data, which contradicts on-the-ground information on fire behavior presented by the 2003 Myrtle Creek Fire. The FEIS makes it sound like the crown fire initiation predictions from NEXUS are widely accepted as accurate and reliable. This is not the case.

Suggested Remedy: *None*

Response: Addressed in the response to The Lands Council and others objections – objection Issue 9 and Issue 10.

Issue 10 (FIRE) (Appendix A #64)
It does not appear that the forest service accounted for the 2003 Myrtle Creek Fire in their fire modeling and figure 3.2 shows that modeling predicts crown fire in several areas of the Myrtle Creek Fire area.

Suggested Remedy: *None*

Response: *FEIS page 3-42, Figure 3.2 shows that surface fire would actually currently be expected within most areas that burned in the Myrtle Creek Fire 2003, because the fire was accounted for and many of the stands have currently been transitioned to where grass would be the main carrier of a surface fire (FEIS page 3-35). Where crown fire is estimated it is through the seedling and sapling sized tree crowns.*

Issue 11 (FIRE) (Appendix A #65-#69)
FARSITE outputs seem to not take into account wind conditions or very low windspeeds were used.

Suggested Remedy: *It is common to obtain detailed weather data, real data obtainable with hourly weather data including wind speed and direction from a Remote Automated Weather Station nearby.*

Response: Real weather data (temperatures, relative humidity's, windspeed, and wind direction, etc.) obtained from the Bonners Ferry RAWS station (the closest weather station to the project area) was modeled in FARSITE – the weather used was that recorded during the same time period as the Myrtle Creek Fire in 2003 and included wind data. All the text files are available in the project file. Fuel moistures were conditioned by using weather data prior to the start of a modeled fire scenario.

Issue 12 (FIRE) (Appendix A #72)
Another important fire behavior output variable that belongs in the EIS is expected mortality to stands during wildfire and controlled fire. The EIS doesn't give any of this information or indicate they tried to calculate the expected mortality.

Suggested Remedy: *Provide additional data on species of tree, diameter distribution of trees and bark thickness.*

Response: Expected mortality was estimated from FVS-FFE and available in the FEIS on page 4-58, FVS-FFE output files for example stands available in project file (starting at doc. FF_061 through FF_067). Examples from what would be expected during a control fire and wildfire (such as Myrtle Creek Fire 2003) was also provided in the response to The Lands Council and others objection Issue 13 page 9. Species and distribution of habitat types are described on FEIS pages 3-54 and 3-55, and composition is described in more detail on page 3-57. Individual tree data does little for the effects of fire at the landscape level. Where large scale crown fires and intense and severe surface fires burn, they generally cause mortality to timber resources.

Issue 13 (FIRE) (Appendix A #73)
The EIS does not describe or provide the nature of the data used in BehavePlus or its source. The EIS does not reference Forest Service protocol for obtaining site-specific fuel data by Brown.

Suggested Remedy: *None*

Response: Site-specific field data was collected for the entire proposed treatment from field surveys area and many other locations in the project area were visited for fuels conditions as well. All field data collected is available in the project file for review starting with project file document FF_003. Brown's transects was used in sample stands to corroborate the fuel loading estimates from the stand exam data and fuel loadings for the fuel models selected to represent the stands. Data for heavy down fuels was also collected in each stand within the proposed treatment areas – these have been established as permanent monitoring plots with GPS locations and photo points.

Issue 14 (FIRE) (Appendix A #78 and #79)
In reference to the NEXUS model used in fire behavior modeling - Are the constants given of 85° temperature, 20' winds = 20mph, and 40% slope appropriate? Also, the information is a scant amount, fine dead fuel moisture is a crucial factor not given. On FEIS page 4-56 it refers to a canopy base height of 9.7' as high? 9.7' is moderate to low. For this region many forests have canopy base heights in the 20-40' range. There is no indication that the Forest Service actually measured canopy base heights in the project area.

Suggested Remedy: *Slopes vary throughout the project area, slopes for each stand should be modeled.*

Response: The above constants go with the Table 4.36 shown on page 4-56 which is specific to the NEXUS model; it doesn't represent all the data necessary – they are constants. Fine dead fuel moistures are required and were used for the models – they are not constants. Fine dead fuel moistures were varied and they available for review in the project file. All modeling scenarios presented in the FEIS are available for review in the project file, as are others not presented that do account for varying slopes associated with the project area.
Canopy base heights were estimated in every stand where fuels data was collected and averaged 1 foot, generally not greater than 3 feet in untreated stands proposed for treatment. Site data available in the project file (doc. FF_003).

Issue 15 (FIRE) (Appendix A #79)
The large amount of land burned as a surface fire in the 2003 Myrtle Creek Fire is a clear demonstration that the USFS is grossly overpredicting the amount of crown fire that will occur.

Suggested Remedy: *None*

Response: The FEIS addresses the potential of crown fire occurring based on current conditions vs. post-treatment. Under the no-action alternative, also referred to as the current condition, crown fire may occur based on several factors of fuels, including low canopy base heights and ladder fuels, canopy bulk density, and weather and topography.

Much of the Myrtle Creek Fire burned as a surface fire in the harvested stands because the ladder fuels had been removed and the tree crowns spaced out, thus crown fire initiation could not occur. The surface fuels had not yet been treated in the harvest units of the Mama-Cascade Timber Sale; the slash contributing to the high rates of spread, fire intensity, and prolonged combustion leading to mortality of the residual trees (Fire Behavior Report in the project file). Crown fire was common in the untreated stands that burned during the Myrtle Creek Fire in 2003.

Issue 16 (FIRE) (Appendix A #83)
The Myrtle Creek FEIS overestimates the ability to reduce the risk of stand-replacing fire via fuel treatments by omitting research, such as from the Hayman Fire, showing high severity large fires are linked to large scale climate and weather conditions.

Suggested Remedy: *None*

Response: Forest and fire managers cannot affect climate, large scale weather, or topography. No matter what the future holds for us as far as climate change, fuels will be the factor that affects fire intensities and resulting effects to the watershed in which we can have some control over. If global climate change brings hotter and drier temperatures and longer fire seasons, it will become increasingly important to address fuel hazards in order to modify fire behavior.

FEIS page 4-73 paragraph 4 reveals SIMPPLLE modeling results that shows proposed treatments would reduce the risk of stand replacing fire in dry forest old growth stands by 62%, while the overall reduction in stand-replacing fire in all treated dry site stands is estimated at 54%. For moist, cool moist, and cold dry old growth the decrease is estimated at 11%.
Studies exist to show that even under some of the most extreme weather condition, fire severity reductions occurred in fires such as the Hayman, in several fuel treated areas affected by the wildfire (Omi et al. 2006).

Issue 17 (FIRE) (Appendix #86 - #89)
The FEIS contains conflicting information about the fire history of the area.

d. Table 3-8 conflicts w/FEIS page 3-48 Figure 4-8.
e. Another map of fire starts in Figure 4.1 (page 4-54) conflicts with both of the above.

Suggested Remedy: *There is a need for credible fire history in the project area to plan such a project.*

Response: Table 3-8 on page 3-33 is fire history on dry sites only. The Figure on 3-48 is for all Myrtle Fire History. The fire starts map on page 4-54 is just fire starts, most of the fire starts since the time of successful suppression were controlled to less than 10 acres (98%). Most of these fire starts since 1940 – other than the Myrtle Creek Fire – cannot be used to estimate fire frequencies because of scale.

Issue 18 (FIRE) (Appendix A #90)
The USFS demonstrates a lack of understanding of the "Fire Triangle" (FEIS p.1-3) by stating that only one side of the triangle – the fuels – can be modified by treatment. This contradicts what page 4-52 states about weather and fuels being influenced by treatments. You can either modify both or you can't. The statement on FEIS page 1-3 was incorrect and misleading.

Suggested Remedy: *None*

Response: FEIS does address the influence on weather in the treated stands that modifying fuels may have. However, there is a level of uncertainty to what degree the weather will be affected based on the intensity of treatment. Wind reduction factors were adjusted in fire behavior modeling based on opening the canopy with treatment. The modification of the fuels after treatment is truly measurable, whereas weather is dynamic and constantly changing at the microsite, local, general, and regional scales. The fuels are truly the only side of the fire triangle that can by modified, as we cannot change topography or the weather and its unpredictable nature.

Issue 19 (FIRE) (Appendix A #92 and #93)
The USFS does not predict fire type in a credible fashion on FEIS page 4-49 and table 4.32. The idea that untreated areas will always or normally have crown fire is without basis. There are many situations where the fire would remain as a surface fire through all or most of the untreated areas – only in some of the most severe weather conditions would it necessarily become a crown fire.

Suggested Remedy: *None*

Response: The Myrtle Creek Fire in 2003 is a perfect example of crown fires being common in untreated stands. No other fire could be more site-specific than that. One could expect the same thing to happen in the remaining untreated stands in the project area if a fire were to burn under similar conditions as when the Myrtle Creek Fire burned. Modeling is not absolute, it provides us w/predictions of what to expect based on certain parameters.

Issue 20 (FIRE) (Appendix A #94)
Photos on p 3-61 of the FEIS illustrate a fallacy in the proposed action related to fuels reduction and desired future conditions. The before photo shows a mixed conifer stand with a high canopy cover but without large accumulations of fuels on the forest floor. The after photo is a heavy thinning **operation** *where 60-70% of the canopy has been removed and would be considered a slash fuel model. The USFS appears to equate reduction in canopy cover and canopy bulk density with "fuel reduction."*

Suggested Remedy: Prescribed fire should have been used in the second photo to show a reduction in fuel loading.

Response: The amount of fuels on the forest floor is not able to be determined from the photos provided on page 3-61 of the FEIS. The photos do show that stand densities and aerial fuels are reduced.

Issue 21 (FIRE) (Appendix A #95 and #96)
More data, information and discussion related to the Myrtle Creek Fire of 2003 are needed in the FEIS. The Myrtle Creek Fire in 2003 needs to be addressed more adequately in the FEIS as there is a tremendous amount to learn from this fire.

a. *A map of its progression through the landscape should have been in the FEIS*
b. *A discussion of how it burned through the treatment units and surrounding landscape should have been included*
c. *How did the 2003 fire burn in comparison of what was predicted in the fire modeling exercises presented in the FEIS?*

d. *Why did the USFS not do something either before or during the fire to protect the municipal watershed intake?*
e. *What stopped the fire?*
f. *Was the Myrtle Creek Fire in 2003 truly a "catastrophic wildlife" as stated on p. 1-3*
g. *What were the short and long-term affects of the fire?*
h. *Where there any beneficial effects of the fire?*
i. *What was the effect of the fire in reducing fuels in the project area?*
j. *What were the fuel models before and after the fire?*
k. *What post-fire activities occurred after the fire?*

Suggested Remedy: *None*

Response: A map of the Myrtle Creek Fire is included on several maps beginning in the map section of the FEIS on page ii. The FARSITE model was calibrated using the Myrtle Creek Fire in 2003 – notes of this included in the project file. FEIS page 4-51 – Changes in weather, including rain, stopped the fire from spreading north into the next drainage. The full fire behavior report from the Myrtle Creek Fire in 2003 is available in the project file and it describes a day-to-day fire report (project file document FF_015). Page 4-63 – the Myrtle Creek fire started with fire danger indices above the 97th percentile and extreme fire behavior (crowning, torching, spotting) was observed.

The Myrtle Creek Fire could be defined as socially catastrophic from the definitions on page 2 of this document, as the drinking water for the residents of the city of Bonners Ferry was affected. Fuel models before and after the fire is in the fuel model descriptions on FEIS pages 3-35 and 3-36.

Although not specifically a fuels reduction project, fuels were in the process of being treated from the Mama-Cascade timber sale; related activities would have included prescribed fire to reduce fuels. The fire caused a lot of mortality in the residual trees. Suppression action during the Myrtle Creek fire included tactics to protect the intake. Affects from the fire are addressed in Chapter 4 in the watershed hydrology section starting on page 4-8 – includes BAER work done after the fire. Effects of the fire in reducing fuels are addressed in the response to Objection #24 by The Lands Council and others. A 250 acre salvage was done in the fire area after the fire.

Issue 23 (FIRE) (Appendix A #97)
The Myrtle Creek Fire started in logging slash and burned through logged areas. The proposed activities appear to be nothing more than a repeat of a failed experiment.

Suggested Remedy: *None*

Response: As mentioned in previous sections, the Mama-Cascade timber sale was not designed as a fuels reduction project, a different purpose and need and different project objectives dictated activities that were accomplished or were going to be accomplished before the fire occurred. The Myrtle Creek fire did not just start in logging slash – it started in a large landing that created flame lengths and embers that quickly jumped the main road and spread uphill. Fuels reduction activities for the Myrtle HFRA project include treatment of fuels in all layers – surface, ladder, aerial – through thinning, slashing, piling, and underburning.

Issue 23 (FIRE) (Appendix A #99)
The reasoning that crown potential reduction will protect watersheds is shallow and ignores the impacts from surface fires and treatments. Surface fires by nature heat the soil surface. Crown fires dissipate most of their heat into the atmosphere and often leave the duff layers on the surface relatively intact.

Suggested Remedy: *None*

Response: Heat per unit area would be greater for a fire burning in the surface fuels of the untreated stands over the treated stands (FEIS bottom of page 4-63). Heavy surface fuels also contribute to prolonged smoldering and severity – heavy fuels being generally greater in a fuel model 10 such as in the current condition (FEIS page 3-37 paragraph 2). Crown fires very rarely burn independently of surface fires and they are the most intense and often severe type of fire. There is no scientific reference by the objector for this issue, nor have I come across any that makes this claim about crown fires and their heat dissipating into the atmosphere.

Issue 24 (FIRE) (Appendix A #100)

The term "catastrophic fire" is used throughout the FEIS and is not defined. Is all fire "catastrophic?" If not, then at what scale does it become that way? The term seems to be used to scare the public.

Suggested Remedy: *None*

Response: I agree with this issue. Catastrophic is subjective, as described in previous Issues. Please reference the response to Issue 2. Intense and severe wildfire (often described as crown fire in the FEIS) referred to as "unwanted" fire for the municipal watershed in the FEIS, the term catastrophic (being defined as "a great and sudden calamity; disaster" in The American Heritage Dictionary of the English Language, 1969) is not used for the fire and fuels analysis. It was mentioned as in the original objectives of the project as developed by the KVRI group outlined in Chapter 1 of the FEIS pages 1-1 and 1-3, it is also referred to in the Watershed portion of Chapter 4 (FEIS page 4-9). No…not all fire is catastrophic and it depends on how catastrophic is defined.

Issue 25 (FIRE) (Appendix A #101)
Citations in the FEIS are not in the Literature Citations at the end of the FEIS. These include page 4-73 (Sala and Calloway 2001), (Stone et al. 1999), (Sutherland 1983) and (Biondi 1996) and Van Wagner 1977, Rothermel 1991 and Nelson 2000 are all referred to without proper citation.

Suggested Remedy: *All the pages with citations and statements and arguments based on these citations should be excised from the FEIS if they cannot be supported with correct citation.*

Response: FEIS page 4-47, information on FlamMap can be found at www.fire.org where it states that FlamMap incorporates Van Wagner's crown fire initiation model (1977), Rothermel's crown fire spread model (1991), and Nelson's dead fuel moisture model (2000).

Appendix C: Declaration provided by Jon Rhodes reference the fire/fuels analysis for the Myrtle Creek HFRA FEIS which was used to a large degree in Objection Number 07-01-00-1041

Issue 1 (FIRE): *The FEIS fails to reasonably disclose peer-reviewed scientific information that indicates the EIS's assessments of changes from historic forest structure and fire behavior are likely in error.*

#55 and #57 in Appendix C: *The EIS fails to disclose that Baker et al. 2006 concluded much of the drier unlogged forest in the Rocky Mountains, including those in the project area, are not currently vastly degraded and altered in respect to tree density, structure, and fire behavior relative to their natural state. Dry forests in the Rocky Mountains generally fit the variable-severity model. The FEIS asserts that the project area now has unnaturally high tree densities and fuels in relation to historic conditions which make severe fire more likely (Reference Baker et al. 2006).*

#56 in App. C: *The EIS does not disclose that other research finds lower elevation, drier ponderosa pine stands have been prone to some level of stand replacing fire (Veblen 2003, Romme et al. 2003a, b, and Reiman et al. 2003).*

#58 in App. C: *The EIS fails to disclose work indicating there is a considerable degree of uncertainty in estimating natural fire regimes, fire return intervals, and departures from them and a great deal of scientific debate regarding them (Veblen 2003, Baker and Ehle 2001, 2003, Ehle and Baker 2003, Kou and Baker 2006 a, b).*

#59 and 60 in App. C: *The EIS fails to disclose that fire regimes remain so uncertain the Veblen 2003 cautioned that "Mean fire intervals…have an uncertain ecological meaning. The EIS relies on Fire Regime Condition Class (FRCC) to describe the existing conditions and effects of the alternatives and fails to disclose that FRCC is a poor indicator of fire severity and fails to disclose the biases and very limited veracity of the FRCC assessments.*

Suggested Remedy: *None*

Response: FEIS page 3-39 – the FEIS does state that dry forests in the west did historically burn with low to mixed severity and even high severity fires at times (Smith and Fischer 1997).

Baker et al (2006) states, "The goal of ecological restoration is to enhance the resilience and sustainability of ecosystems through management decisions that return them to a state considered to be within the historical range of conditions prior to significant impacts from EuroAmerican land uses (Landres et al., 1999). To achieve ecological restoration, as well as ecosystem-based management in general, managers need to understand how past disturbances shaped landscapes prior to

permanent EuroAmerican settlement (Veblen, 2003)…It is impossible to determine the correct restoration model for a particular place (emphasis added) without some collection of information on the site to be restored (White & Walker, 1997; Veblen, 2003)."

The study by Baker et al 2006 suggests a variable-severity model may be more applicable to ponderosa pine-Douglas-fir forests of the Rocky Mountains is being reviewed. I agree that our local drier forest types likely burned with combinations of mixed and even higher severity at times, as the previous paragraph suggests. However, Art Zack and Pat Behrens have completed **site-specific field surveys** and found data on fire return intervals in the dry sites of the Myrtle HFRA project area that suggests frequencies of **approximately** 40 years (methodology and findings are available in the project file). Mr. Rhodes implies that the study generalizes all dry forests in the Rocky Mountains. Site-specific data should supersede all generalized information. Regardless, the continuity of fuels in all of the stands in the proposed action, including the moist stands, are such to support high-intensity surface fires and crown fires – undesirable in the municipal watershed. Historical variability suggests that the landscape in which this forest or vegetation type covers would have been in various successional stages, including those that would have contributed to higher severity fire such as closed canopies with more climax species. This is accounted for in the FRCC analysis which is available for review in the FEIS pages 3-39 and 3-40 and in the project file.

As discussed in Baker et al (2006), "At the landscape scale (i.e., a few hundred hectares or more) in Rocky Mountain ponderosa pine–Douglas fir forests, variable fire severity and variation in environment led to a mosaic of patches naturally varying in age and tree density. Some patches were large." Baker et al (2006) continues, "Other landscapes had finer-scale mosaics of burned and unburned forest of various ages (Graves, 1899)." In essence, the proposed prescriptions in these dry forests are designed to manage for this type of variability, which likely occurred historically. As stated in the FEIS, p. 2-15, "Group selection prescriptions (uneven-aged management) would create a mosaic of forested openings and thinned areas. The openings would treat the areas in the stand with the highest risk of insect, disease and ladder fuels. Ponderosa pine and larch would regenerate in these openings; the thinned areas would favor the retention of the largest existing ponderosa pine, Douglas-fir, and larch." Page 4-73 of the FEIS goes on to discuss the desire to manage for this variability, "the average target density for the proposed group selection prescriptions in dry forest old growth would be 80-100 $ft^2$of basal area…Some areas where old growth-sized trees dominate would exceed the average density and may be as high as 200 ft^2. Other areas, with predominantly small diameter trees, would be opened up to less that 60 ft^2." Further on p.4-73 the FEIS states, "Subsequent entries would be designed to approximate historic disturbance cycles." Based on fire history data specific to the project area there is evidence that, "some intervals were less than 20 years and some were more than 50 years."

Analysis of the landscape using FRCC is discussed in the Healthy Forests Restoration Act. The tool is used and promoted in an interagency collaboration by a cadre of government agencies, private entities and non-profit groups (BLM, NPS, The Nature Conservancy, USFS, Systems for Environmental Management, USFWS, Forest Service Research, BIA, and USGS – www.frcc.gov). The methodology provided in the *Interagency Fire Regime Condition Class Guidebook was used for FRCC analysis and the landscape was analyzed at the 28,000 acre scale – approximately the 6th HUC (slightly larger).*

FRCC (not to be confused with just the fire regime) was used as one of the methods of describing the current condition, <u>but the FEIS does not suggest that FRCC is an indicator of fire severity</u>. The fire regime of a particular forest type does not change regardless of the vegetative or fire frequency reference condition departure. A forest type that is in a high-severity fire regime will remain that way whether it is in a condition class 1 or condition class 3. The FEIS does suggest that FRCC analysis can be a useful tool for tailoring fuels treatments that move vegetative classes from those that are over represented to those that are underrepresented (FEIS page 3-38). It does not suggest it is the only tool. Nor does it suggest anywhere that FRCC equates to fire hazard or a need for fuels reduction, because high-severity fire regimes may not be out-of-whack but still have hazardous fuel loads. Analysis of FRCC was done in accordance with HFRA.

In review of Veblen 2003 he states that in some forest ecosystems fire hazard reduction through fuels management may be achieved by restoring historic fire regimes of frequent surface fires. In other fire regimes that include widespread stand-replacing fires at long intervals, restoration of the historic fire regime will not reduce the hazard to property and humans. I agree that restoration in these fire regimes <u>may</u> not reduce the hazard, but this project was designed to reduce fuels to lessen the fire effects in the watershed. Moist and cool moist stands have not missed fire return intervals due to fire suppression. It is suggested they have been altered by other means though at the landscape scale – insects and disease, especially the exclusion of white pine due to blister rust, past harvest methods, actions on private land, and road building and densities to name a few. Ecological restoration needs to consider all of those other issues as well.

Fuels reduction is the objective for the project, including these stands, because regardless of the condition class, these forests have fuel continuities that present a fire hazard and allowing them to burn with high severity is not wanted in the municipal watershed. Regardless, treatments are ecologically consistent with a fire regime that creates high variability.

The goal of Veblen (2003) was to show the need for conducting area-specific fire regime research. Site-specific fire history findings were used and site-specific vegetation and fuels data was used.

Ron Hvizdak adds that at the stand level these forests may be in the right condition, but taken over a larger landscape, past fire and the fuel breaks it created would have likely been present to break up the fuel continuity. Even though the moist stands aren't entirely out of whack and typically burned with mixed to high severity – is that what we want in a municipal watershed?

Issue 2 (FIRE) Appendix C #61-#62:
The EIS fails to reasonably disclose the fuel reduction treatments are ineffective in altering fire behavior and inconsistent with restoration in moist forest with natural fire regimes dominated by infrequent, severe fire. This refers to higher elevation moist forests and the fact that fire behavior in these forest types are primarily controlled by weather.

Suggested Remedy: *None*

Response: This issue first refers to the moist forests as higher elevation moist forests, then drops that and refers to them in later points as just moist forests… there is a difference – in fire regimes and in species composition. FEIS page 3-39 – the FEIS identifies the moist, cool moist, and upper elevation subalpine forests as having mixed to high severity fires and that current science suggests that "fire exclusion due to fire suppression has had 'little to no effect' on the fuels or even the forest structure in these forests characterized by high severity fire regimes (Franklin et al. 2006)." FEIS page 4-54 – mixed severity fire regimes, such as those that exist within the project area, encompass a wide range of fire severities, frequencies, and extents (Raymond and Peterson 2005). Because of this variability is more difficult to measure the role of fire on these ecosystems. Refer back to the response to Issue 1 by Jon Rhodes in discussion of historic fire regimes on moist sites. In addition, recent fires in the Northern Rockies and elsewhere have shown that fuel treatments done properly are effective. On the Rexburg District of the Kootenai National forest, the North Fork EIS and Pinkham EIS state that larger regeneration units had an effect on the intensity and spread of fires in 1994 and 2000

#63 in Appendix C: *The FEIS failed to reasonably disclose that under Alt. 2, 50% of the proposed treatments will have no benefits with respect to fire, while incurring significant damage to soils, watershed processes, and aquatic systems from the direct and indirect impacts of tree removal activities (Kattlemann, 1996; Rhodes and Odion, 2004). In doing so, the EIS failed to adequately differentiate among the alternatives in respect to their environmental effects.*

Suggested Remedy: *None*

Response: I did not review the entire 66 page report by Kattelmann (1996) (it was spelled Kattlemann in the objection, but it is Kattelmann) referenced above on hydrology and water resources for the Sierra Nevada Ecosystem Project: Final report to Congress. However, in his abstract he states that in particular to the Sierra Nevada, "Proposed programs for reducing the amounts of fuels in forests have potential for significant aquatic impacts; however, catastrophic wildfire carries far greater risks of grave damage to aquatic resources"(catastrophic is not defined). The introduction of the report does provide at least one similarity for the Sierra Nevada ecosystem as Myrtle Creek – it provides the water that the people use in their daily lives. In the section on logging effects to aquatic resources on page 876 he states that (paraphrased):

Timber harvesting by itself seems to have little effect on soil erosion when compared to road construction used for log removal. Although soil disturbance that goes with cutting trees and then skidding the logs will expose the soil to splash from raindrops and rill development, in practice, "comparatively little soil leaves harvested areas." He states that there are several factors that seem to mitigate the impacts from logging: harvesting in accessible and productive areas, smaller discontinuous sizes of compaction, and vegetation reoccupying the logged area to follow.

As for the benefits of treatment on fire behavior: described in the FEIS page 4-52, fuels, weather, and topography all play critical roles in fire behavior. If you bring together the worst case scenario of the 3: a dry, hot, windy day, on steep terrain, and heavy continuous surface, ladder, and crown fuels, you can expect extreme fire behavior – torching, crowning, spotting. Then if you modify one thing, the fuels, by reducing the surface fuels, breaking up the fuel continuity, removing the ladder fuels, and spacing the tree crowns as this project proposes to do, the expected fire intensity and severity can only decrease. The FEIS describes in several locations of the fire and fuels analysis the fire behavior that would be likely in these stands currently, and after treatment (summarized page 4-49).

The 50% of Alternative 2 being alluded to in this objection is moist site stands and the objector believes that treatments are highly unlikely to affect fire size or severity or to be consistent with restoration. Treatments would be within the expected variation of these types of stands that had longer fire free interval – but disturbance was a natural part of how these stands

developed (Smith and Fischer 1997). These stands have heavy continuous fuels in the surface, in the ladder, and in the crowns. Basic fire behavior courses teach fire managers that all fuel will burn, thus less of it with all other factors being equal means less fire intensities.

When a fire breaks out, the chances for high severity fire effects on soils can be much higher in untreated areas with excessively heavy fuel loads compared to those that have successfully completed treatment, including post-harvest logging slash (Certini 2005; Cram et al. 2006; Graham et al. 2004; Gorman 2003; Keane et al. 2002).

The soils analysis, in conjunction with the watershed analysis and modeling, adequately discloses potential damage to soils and hydrology from both fire and proposed management activities (FEIS 4-76 to 87, but specifically for acres in Table 3.20, page 3-72, PF Doc. SOIL-8; 4-79, 80, 85; also see Issue #3). Increased sediment delivery was calculated using the WEPP FuME model, a culmination of the Disturbed WEPP, Road:WEPP, and GeoWEPP model used in the hydrology/watershed section to predict sediment yield changes due to harvest and fire activity. These models also were used to predict sediment erosion from roads to incorporate a more detailed component of sediment measurements. In summary, the results predict that sediment erosion could be as high as 100 times greater in magnitude than that produced by timber harvesting if a stand-replacing wildfire were to occur (FEIS 4-21, 28, 38).

Issue 3 (FIRE) in Appendix C #64:
The EIS fails to reasonably disclose that fuel treatments in moist forests are not consistent with restoring ecological health or more natural fire behavior in roadless areas. Studies have noted that treatments in moist forest are unlikely to have any beneficial effect on fire behavior, natural fire regimes, or the restoration of natural forest structure. This is significant because scientific assessments have repeatedly noted that roadless areas are essential to protect in order to protect and restore aquatic systems.

Suggested Remedy: *None*

Response: Please see previous 2 responses. **Fuels treatments in the moistest stands, those on the North slopes in the Myrtle Creek Drainage – Section D units – tie into the overall fuels treatment proposed.** In looking at potential treatment areas from a landscape perspective, much of the upper parts of the Myrtle Creek drainage, west of the proposed action area, were either privately owned, upper elevation, or other issues came up such as moist site old growth. Therefore, project activities were focused lower in the drainage. In addition, the 3500+ acres of the Myrtle Creek Fire was another area that will need to be looked at in the future, but not with this project. Section D units did not burn in 2003 or in the large 1926 fire that burned 6,000 acres of the project area. Thus, the surface fuels are heavy, the ladder fuels are abundant, and the crowns are dense. During higher fire danger, these stands would support extreme fire behavior such as spotting, torching, and crowning. Their placement on the landscape was strategic – fires moving from the south would likely encounter these units and extreme fire behavior would be modified. They tie previous units and the proposed units together from a landscape perspective – which is the perspective that needs to be addressed when discussing larger fire behavior. Activities would be in the range of variability that would be expected with natural disturbance. According to Smith and Fischer 1997 (Fire Ecology of the Forest Habitat Types of Northern Idaho) fire regimes in these forest types were highly variable. Many of these stands were characterized by mixed-severity and small, nonlethal burns in presettlement times, with high severity fires occurring on average of every 200-250 years. They are generalized by heavy fuels that under very dry conditions can lead to surface and ground fires smoldering for months (prolonged smoldering is directly related to severity) – and severe fire including crown fire becoming possible. The FEIS does not assume that these stands have missed fire return intervals according to a higher-severity, longer interval fire regime. Many of these stands were historically characterized by high fuel loads as they are now, others would have been more open from stand-replacing fires; there would have been variability. That does not change the fact that the current high fuel loads creates a fire hazard.

The 36 CFR Part 294 - Federal Register Final Rule 2001 addresses the removal of timber in roadless areas as follows:

The use of timber harvesting, as permitted by this rule, and other fuel management techniques will help maintain ecosystem composition and structure within its historic range of variability at the landscape scale.

Treatment priorities will be consistent with those identified in the report Protecting People and Sustaining resources in Fire-Adapted Ecosystems: A Cohesive Strategy. These include wildland urban interface areas, readily accessible municipal watersheds, and threatened and endangered species habitat.

On page 3258:

§294.13 Prohibition on timber cutting, sale, or removal in inventoried roadless areas.

Paragraph (b)(1) allows generally small diameter timber to be cut, sold, or removed in inventoried roadless areas where it maintains one or more of the roadless area characteristics as defined in §294.11 and: (1) improves habitat for threatened, endangered, proposed or sensitive species or (2) To maintain or restore the characteristics of ecosystem composition and structure, **such as to reduce the risk of uncharacteristic wildfire effects**, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.

Being that these stands are within a highly variable fire regime, activities proposed would be accomplished in the range of variability as low, mixed, and high severity disturbance regimes including fire, insects and diseases would have, influencing species compositions and structures. **Uncharacteristic wildfire effects** (page 3258) include unnatural increases in wildfire size, severity, **and resistance to control** and the **associated impacts to people and property.** The fuels in these stands create a hazard because of the effects a fire could have on the municipal watershed and the people it serves. Hazardous fuels treatments (like this one) in inventoried roadless areas are not prohibited by this rule.

In response to the last sentence of this objection – the treatments are being designed to provide protection of these portions of the roadless area from unwanted fire effects. An effects analysis for each aquatic resource was completed and can be reviewed in project file documentation as well as the FEIS.

Issue 4 (FIRE) in Appendix C #65, #66, #67, #68:
The FEIS fails to reasonable disclose the transcience of fuel reduction treatments and the potential for fuel treatments to increase severity and fire impacts. The removal of tree canopy and reduced competition often stimulates vegetation growth immediately after thinning or fire (Graham et al. 2004, Kauffman, 2004) negating the effect of fuels treatments. This regrowth will contribute to crown fire, which the FEIS ignores.

Suggested Remedy: *None*

Response: The potential for fuels treatments increasing severity and fire impacts has been covered previously – for example see objection Issue 5 by The Lands Council and Others.
In addition, on page 4-53 – the avenue for crown fire initiation is addressed by treating ladder fuels (increasing canopy base heights), spacing the tree crowns will address the path of fire moving from one tree to the next once it gets into the crowns. Regrowth of the understory will contribute to increased surface flame lengths over time and as the vegetation gets larger may contribute to torching or crown fire initiation. However, treatments will space the tree crowns of the overstory trees as well, to a point where active crown fire would be nearly impossible to be sustained.

Intermediate treatments are scheduled with silvicultural prescriptions for each treatment unit. Subsequent intermediate treatments, such as prescribed fire or precommercial thinning, may be necessary in the future to maintain a reduced fuel hazard.

Issue 5 (FIRE) in Appendix C #69, #70, #71:
The analysis of crown fire treatment does not address and disclose the impacts from increased surface fire severity caused by treatments. The EIS does acknowledge that canopy removal is likely to increase the severity of surface fire due to increased windspeeds and decreased fuel moisture – but fails to connect this with water quality impacts and the effects on municipal water supply, soil impacts, and erosion.

Suggested Remedy: *None*

Response: The FEIS is not referenced correctly: FEIS page 4-52 states that increased windspeeds and drying of fuels will increase surface fire spread rates and fire intensity, such as flame length – not fire severity. Severity is not the same as intensity – it is related to fire effects to resources such as soils, wildlife, fish, watershed, and mortality which is what the objection refers to. Effects of the alternatives are described in detail in Chapter 4 of the FEIS under the Aquatics and Soils headings.

Issue 6 (FIRE) in Appendix C #71 through #72:
The EIS fails to reasonably assess and disclose the risk of fire occurrence in the project area, which is needed to credibly assess the likely impacts of the alternatives. The EIS does not assess the likelihood of fire occurring in the project area and if a fire does not occur, treatments cannot have any potential impacts on fire behavior that can compensate for the damage caused by fuels treatments.

#72 in Appendix C: *It is critical to analyze and disclose the probability of fire and high severity fire – to analyze the tradeoff of damage to resources such as soils, sediment delivery and elevated peak flows from treatments (cites Agee and Skinner 2005).*

Suggested Remedy: *None*

Response: The Objector is correct, the probability of a high severity fire is not certain to occur within the project area during a given timeframe. The fact, however, is that when a fire does occur (which they do yearly in the project area), the chances for high severity fire effects on soils can be much higher in untreated areas with excessively heavy fuel loads compared to those that have successfully completed treatment, including post-harvest logging slash (Certini 2005; Cram et al. 2006; Graham et al. 2004; Gorman 2003; Keane et al. 2002).

On a side note, the Objector contradicts himself by stating in point 72 of the declaration that "…the EIS concedes, albeit, wholly adequately" while in the next sentence he claims that "….the EIS utterly fails to disclose it…", by "it" meaning damage to soils? It is therefore difficult and often impossible to follow the thought process that the Objector puts on paper (and not just for this point) and to respond adequately to repetitive statements that go on point after point yet state the same in often nebulous ways.

In an attempt to answer this, the soils analysis, in conjunction with the watershed analysis and modeling, adequately discloses potential damage to soils and hydrology from both fire and proposed management activities (FEIS 4-76 to 87, but specifically for acres in Table 3.20, page 3-72, PF Doc. SOIL-8; 4-79, 80, 85; also see Issue #3). Increased sediment delivery was calculated using the WEPP FuME model, a culmination of the Disturbed WEPP, Road:WEPP, and GeoWEPP model used in the hydrology/watershed section to predict sediment yield changes due to harvest and fire activity. These models also were used to predict sediment erosion from roads to incorporate a more detailed component of sediment measurements. In summary, the results predict that sediment erosion could be as high as 100 times greater in magnitude than that produced by timber harvesting if a stand-replacing wildfire were to occur (FEIS 4-21, 28, 38).

The Objectors cite Agee & Skinner (2005) who make a valuable comment in their paper by stating "[w]hile the impacts of thinning and burning can be predicted, and may have some negative environmental impacts, these impacts need to be evaluated against the option of ''no action''. That is what the Myrtle HFRA project is all about – the impacts of thinning and prescribed burning can be reasonably predicted whereas the potential impacts of wildfire, especially on soils within this municipal watershed, is virtually unpredictable because of naturally variable conditions during the time of burning. However, past examples, such as the Sundance fire that burned 56,000 acres in 1967 just south of Myrtle Creek, still display reduced soil productivity to this day. In a nutshell, silviculturally treated stands experience less severe fire damage and subsequently less loss of litter and herbaceous loading. Therefore, these stands are less susceptible to soil loss and more conducive to residual plant growth and recovery (Cram 2006).

Appendix C #73 through #77, #85:
The EIS fails to disclose the low risk of fire occurrence (0.0054 for any particular acre historically and 0.0026 with current management), and even lower risk of higher severity fire occurance (0.0017). The EIS analyzes impacts of high severity fire to soils, aquatics, roadless areas, and water quality, which is unfounded since the likelihood of high severity fire is so low.

Suggested Remedy: *None*

Response: Dr. Mark Finney (Researcher at the Rocky Mountain Research Station) also addresses the issue of fire probability for the Bitterroot's Middle East Fork Project:

The summation of probabilities must be taken over time – many decades in fact. Probabilities may exceed 100% for a large fire somewhere in the project area if the summation is performed over a few 1000's of acres and one or two decades.

He states there are problems with conclusions based only on the probability of an event. Fire occurrence is the frequency of fires within a specific area and period of time, and implies nothing about the fire size or probability of burning at a given geographic location (Finney 2005). The probability of ignition is not the same as the probability of burning. The probability of ignition is lower, yet National Forests still require funding for suppression forces. They fight fire because the consequences of having free-burning fires are felt well beyond the immediate ignition location and for reasons that are unrelated to the probability per acre.

Eighty-one fires were recorded from 1941 to 2004 (63 years) within the project area – this doesn't include adjacent fires that could have moved into the project area. Such as was the case in 1926 when a fire started 2 drainages south of Myrtle Creek, yet ended up burning 6,000 acres of the project area. However the simple fire risk is this: the 81 fires equates to at least 1.3 fires per year that the Bonners Ferry Ranger District fire personnel has to deal with suppression on. Already in 2007, a lightning caused fire was detected on June 4th in Section 17 of T62N R1W of the project area – fire danger was low and several days of heavy rain had occurred prior to the detection of the fire. A plume of smoke from the fire was visible from town, fire crews responded and the fire was suppressed. Had this fire occurred on a hot, dry August day, rather than a wet June day, the outcomes could have been significantly different.

The objector states that the risk of fire occurrence is 0.0026 for fire burning any particular acre under current management and only 0.0017 for high severity fire. These figures were calculated included the Myrtle Creek Fire data for 2003. **Therefore, if these calculations were done prior to the Myrtle Creek Fire, in 2002 perhaps, the numbers for risk probability would have been even lower 0.00069 – but regardless, would not have changed the fact that the Myrtle Creek Fire occurred.** With just this factor alone, it seems silly to rely on this type of risk probability when dealing with fire behavior in the municipal watershed…and the effects a high severity fire could have on the drinking water and other resources in the project area.

There is a large amount of uncertainty associated with risk probability. Prior to the 2003 fire, some members of the community may have been satisfied with such calculations as presented in this issue, it's hard to say. However, having witnessed and tasted the effects of that fire…hazardous fuel levels + dry, hot weather + an ignition source = unwanted risk of fire in the municipal watershed.

The analysis of resource effects focusing on higher severity fire is appropriate because the fuels characteristics within the stands would lead to crown fire, or high severity fire. It makes the most sense to evaluate effects based on the type of fire that would be predicted to occur when fire dangers are high and fires pose the most concern to fire managers. We looked at the worst-case scenario, it provides the best comparison for looking at the effectiveness of treatments because with low or moderate fire danger, such as in the spring, pose little threat of escape, if they even start in the first place..

Using the Myrtle Creek Fire in 2003 as an example, erosion and sediment delivery occurred where the fire burned with moderate and high severity. The FEIS page 4-8 describes post-fire effects including those where the fire burned with low, moderate, and high severity.

Issue 7 (FIRE) in Appendix C #87 through #88:
The EIS does not reasonably assess and disclose the likelihood that fuel treatments can reduce fire severity. The EIS is devoid of any attempt to determine the likelihood of fire affecting treated areas during the time fuels are reduced. Fifteen years is used as a threshold of how long fuels treatments will last. Fuel levels rebound after treatment, so their effectiveness declines with time.

Suggested Remedy: *None*

Response: The effectiveness of fuels treatments do decline with time, as addressed in the proposed action, as well as on FEIS page 4-48.

Agee (2002) addresses this: "Fuel treatment benefits are known to lapse as surface fuels accumulate and stands change. Throughout most of the western US, we invest hundreds of millions of dollars annually (sometimes more) in attempting to exclude fire, and in the process are doing an excellent job of growing fuels and vegetation in preparation for the next fire (Arno and Brown 1989, 1991). For this reason there is a continual need for investing in measures to compensate for interruptions of fire cycles well beyond the timeframe of any existing planning framework. This does not mean that all areas proposed for treatment will require some kind of mechanical re-treatment. In fact, a periodic landscape level analysis will be needed and will likely identify some areas to receive prescribed burning for maintenance of fuel and vegetation dynamics as well as new areas that, once treated, compliment the function of the existing landscape structure."

Issue #86 in Appendix C:
Treatments will damage soils and project activities will cause more disturbance than is likely to occur from high severity fire on average over the next 15 years.

Suggested Remedy: *None*

Response: The objector states that treatments will damage soils and project activities will cause more disturbances, but does not provide information as to how or to what degree. The objection point is subjective and is not backed by any time of reference material for us to review. However, please see the response to #72 above under Issue 6. The effectiveness of fuels treatments is addressed in Issue #7 above.

Issues #87 & #88 in Appendix C:
The EIS failed to reasonably disclose that Alt. 2 will only nominally reduce fire severity over the No Action Alternative - on 26 acres (1%) of the treated area over 15 years. This flaws the analysis of impacts on watershed and aquatic resources including soils.

Suggested Remedy: *None*

Response: The issue relies on the fact that only 2.5% of the 2,086 acres are likely to encounter high severity fire over 15 years. That analysis is flawed, because future fire events, especially considering human involvement is unpredictable. The Myrtle Creek Fire in 2003 demonstrated that. By Mr. Rhodes theory, the Myrtle Creek Fire should not have happened at all; it certainly did not follow the logic of how much should have burned as high severity according to his calculations.

FEIS page 2-15 discusses that "periodic treatments such as thinning and underburning would be used every 15-20 years to develop and maintain historical values relating to stand composition, structure, fuel loadings and wildlife snags." Page 4-54 under Alternative 2 – In the long term further treatment would be necessary as material builds up around residual trees.
FEIS page 4-48 under a.Fuel Accumulation – "Regardless of the alternative chosen, fuel build-up will continue indefinitely in the Myrtle HFRA project area and proposed treatment area as stands go through successional changes and disturbance regimes. An action alternative (Alternative 2 or 5) would reduce fuels in the near-term and future entries would be needed to control fuels accumulation into the future."

Ron Hvizdak added in his letter to Ranotta McNair in review of the FEIS (doc. FF_155) that in some treated stands, the fuels will develop over time (1-5 years) to other Fuel Models than the treated 8 such as 2, 5, and 9. A fire burning in these fuel models would still have overall reduced intensities and reduced risk to crown fire than a fuel model 10, especially due to reduced aerial fuels.

Issue 8 (FIRE) in Appendix C #89, #90:
The failure to reasonably evaluate fire occurrence is a fatal flaw with respect to the analysis and disclosure of the alternatives on sediment delivery, peak flows, and soils.

Suggested Remedy: *None*

Response: See response above to #72.

Issue 9 (FIRE) in Appendix C #91 and #92:
The EIS did not adequately analyze the impacts of fire. The benefits of fire were not adequately discussed – including the recruitment of large woody debris and snags (Lindenmayer et al 2004, Beschta et al. 2004, Hutto 2006, Baker et al. 2006). The EIS failed to disclose that the impacts from fire are often far more transient that the impacts of tree removal and associated activities (Beschta et al. 2004).

Suggested Remedy: *None*

Response: The FEIS, page 4-86, states that "Fire would not be eliminated as an ecological process and proper management through fuel reduction and prescribed burning would sustain a future environment where fire is integrated and soil damage is minimal. Mitigation of unwanted potential fire effects through fuel treatments would reduce the chance of detrimental effects to soil productivity and would add little to no additional impact to the project area…."

Fire plays an important part in the ecosystem and its beneficial aspects for soils are numerous – **as long as high burn severities are not extensive enough to sterilize large areas of soils and reduce long-term soil productivity through the reduction or elimination of organic material (duff) and coarse woody debris**. The FEIS describes wildfire effects in greater detail on page 4-78 and 3-70 and by disclosing that "[w]ildfire is a natural component in forest watersheds and has

influenced forest soils and watershed processes for thousands of years. However, as a result of fire suppression during the last century, natural fire regimes do not exist anywhere in northern Idaho today."

Currently, the amount of coarse woody debris (CWD) present in the project area varies (PF Doc. SOIL-1). "Many stands, especially those proposed for first entry, contain high amounts of downed wood originating from root disease and beetle infestation. These amounts greatly exceed the recommendations of Graham et al. (1994) and Brown et al. (2003) and contribute to hazardous fuel loading. Historically, fire would have moderated the amount of accumulated coarse woody debris (Smith and Fischer 1997)" (FEIS 4-81).

Based on observation and gathered data (PF Doc. SOIL-1; PF Doc. FF_003), there does not seem to be a shortage of CWD in the proposed harvest units with the exception of Unit G1, G3, and G4. The FEIS 2-27 (g) and Table 2.10 state design features for the retention of coarse woody debris (Errata). In short, higher severity fire may be a good way to recruit snags – but the question remains whether a watershed full of snags and extensive hillsides of severely burned soils is more beneficial than a watershed with forest interspersed with treated units, appropriate levels of CWD, and only locally impacted soils.

(Fire) Appendix D: Declaration provided by Ron Wakimoto reference the fire/fuels analysis for the Myrtle Creek HFRA FEIS which was used to a large degree in Objection Number 07-01-00-1041.

Issue 1 (FIRE) page 1 of Appendix D:
The fire risk was not accurately represented – no analysis considering time of year was done on the fire starts nor were person-caused or lightning caused fire separated.

Suggested Remedy: *Location of person-caused fires should be considered. With lightning, solutions might be to preposition personnel and equipment during storms in specific areas. With person caused fires, access can be regulated and closures can be enforced. The timing of lightning ignitions vs. person-caused ignitions relative to actual fuel moisture should be considered. Resolution of analysis should match project objectives and values at risk.*

Response: Fire starts from the time of successful fire suppression have been recorded for this area as shown on FEIS page 4-50 and 4-51 Table 4.33 and Figure 4.1. Eighty-one fires have been recorded within the project area – many others in immediately adjacent watersheds, of which 94% were lightning caused and 6% were determined to be person caused. These fires were recorded between the months of June through October – the majority (>85% being in July, August and September). The district does not have enough resources to preposition them. Lightning storms tend to be widespread and cause multiple ignitions throughout the 426,000 acres protected by the Bonners Ferry Ranger District.
Values at risk: From desired future conditions (FEIS page 1-5) and page 1-8 under Forest Plan Direction – The municipal water supply and infrastructure, Old Growth, soil productivity, fisheries habitat, *recreation*, diversity of plant and animal communities, safety of the public and firefighting resources in the event of a wildfire.

Forest Plan standards:

1. Human life and property will be protected;
2. Fire will be used to achieve management goals according to direction in management areas;
3. Appropriate suppression response for designated old growth, except in wilderness, will result in preventing the loss of old growth
4. Activity fuels will be treated to reduce their potential rate of spread and fire intensity so the planned initial attack organization can meet initial attack objectives

Of the 5 person-caused fires discovered and suppressed since 1941, all started on National Forest System lands, 3 were in the head-waters in the cool-moist and cold-dry forests, 1 was low in the drainage off the main road, and 1 was near a ridge dividing the Myrtle Creek drainage from the Snow Creek drainage.

Issue 2 (FIRE) page 1 of Appendix D:
In regards to FRCC, the coarse-scale technique is not adequate for project-level work and no characterization of the fuels in the treatment areas is presented. The lack of fuels information for the previously treated areas is troublesome because it would give us a good look at future fuels conditions for the proposed treatments. Data on current treatment and project area quantity and quality of fuels compared to the range of historic variation are not presented; this could provide an idea of fuel response for the treatments based on what has happened w/fuels in past treatments. In moist sites, thinning without burning could lead to high severity in the event of a wildfire to follow.
Suggested Remedy: *None*

Response: Analysis of the landscape using FRCC is discussed in the Healthy Forests Restoration Act. The tool is used and promoted in an interagency collaboration by a cadre of government agencies, private entities and non-profit groups (BLM, NPS, The Nature Conservancy, USFS, Systems for Environmental Management, USFWS, Forest Service Research, BIA, and USGS – www.frcc.gov). The methodology provided in the Interagency Fire Regime Condition Class Guidebook was used for FRCC analysis and the landscape was analyzed at the 28,000 acre scale – approximately the 6th HUC (slightly larger). An overall landscape condition class was determined, as was the condition class of each vegetative stratum within the landscape. Fire regimes varied by forest type. Local vegetative conditions based on the 4 distinct forest types that occur within the project area were used to determine condition class. Process documents are available for review in the project file (doc. FF_039). Each stand was looked at individually for determination of potential natural vegetation (PNVG or biophysical setting – BpS), stand structure to determine seral stage necessary for FRCC, and site-specific fire history data was used to "over-ride" the reference fire frequency for each PNVG or BpS. FRCC does not require fuels data such as surface fuel load, canopy load, canopy base heights, etc. Although, some very rough assumptions on fire hazard could be made based on last fire and stand structure, but should not be relied on. Separate fire behavior modeling should be used based on local fuels conditions – as it was for this project – for determination of hazard based on predicted fire behavior.

None of the previous treatments in the project area were designed as fuels reduction treatments such as this one. Therefore, making a comparison to how future fuels may look based on how previous treatments look, may not be the best estimation. Comparisons to other fuels reduction treatments by forest type across the district are more relative, and the proposed treatments will be similar to others that have occurred. Examples are provided in the FEIS and in the project files. However, being this is the municipal watershed, previous activities on NFS lands did involve adequate treatment of the surface fuels created from harvesting and slashing of ladder fuels (especially within the past couple decades) – including grapple-piling and pile burning and prescribed underburning. Canopies were reduced, with generally the largest and most vigorous overstory trees remaining with ladder fuels removed – which would be similar to what is proposed. Previous treatment areas <u>were</u> visited during fuels data collection – some photo records with field notes are available in the project file (doc. FF_005 and FF_006). FEIS page 3-35 through 3-37 describe some of the fuels within the previously treated stands. Not all previously treated stands were visited within the 28,000 acre project area. Fuels data was summarized and then applied to other stands that had similar characteristics for canopy base heights, surface fuel model / fuel load, canopy bulk density estimations, etc. This information was used to describe the stands for fire behavior modeling that was used, such as FARSITE. The FEIS does not claim that fuels treatments will last indefinitely. Monitoring for intermediate treatments or maintenance will be necessary. Where prescribed underburning is used, a continuous cycle of 10-20 years of burning may be necessary to control understory vegetation and regeneration of undesirable species. Many of the previously treated stands are on private industrial land and the condition of the surface fuels in some cases are different than what would be seen on NFS lands, in addition to the amount of residual canopy (regeneration harvests that generally removes the canopy), which was noted in the field notes available in the project file.

Based on stand replacing and mixed-severity fire regimes, project prescriptions would be within the large range of historic variation (mixed severity – 10-90% mortality, stand replacing >90% mortality in upper canopy layer). For these local forest types, some stands would have been more open with varied fuel levels and canopies depending on last fire and severity, whereas some may have been much denser with heavy fuel loads after decades or centuries without fire. In more moist or average years, fires may not do much – stand replacing or large fire events would likely occur during drought years with higher fire danger (Smith and Fischer 1997). Cool-moist and cold-dry upper elevation forests have natural fire regimes more typical of stand replacing events and fire suppression has likely not affected these forest types due to the long-intervals of fire. Treatments are not proposed in these forest types with this project.

The potential effects of opening up the canopy with fuels treatments is addressed in the FEIS on page 4-48 and page 4-52. Where grapple-piling with pile burning is prescribed over underburning it is generally due to the limitations of the residual trees and risk of fire caused mortality. Activity fuels, including ladder fuels that will be slashed post-harvest of the overstory and intermediate trees, will be adequately treated to a level acceptable by fire managers for reduced surface fire behavior but also maintaining coarse-woody debris at a level within the recommendations by habitat type for soil productivity.

Issue 3 page 2 of Appendix D:
The most important issue is the inclusion of both the Selkirk and Kootenai Peak Inventoried Roadless Areas for proposed treatment by harvest rather than fire. "I do not believe that a simple forest-level project should be allowed to trump public participation in the decision on wilderness designation."

<u>Suggested Remedy</u>: *None*

Response: Opinion**,** The two roadless areas are within a municipal watershed. Historically, fires tend to burn down the drainage and into the valley where people live. There are other values to consider besides potential wilderness, especially in light of the quality of these roadless areas.

Appendix H: Comments provided by the KEA in reference the fire/fuels analysis for the Myrtle Creek HFRA FEIS which was used to a large degree in Objection Number 07-01-00-1041

Issue 1 (FIRE) page 1:
The FEIS needs to include high quality information that describes the status of the logging activities on the day the fire was started in September 2003, and the status of the fire investigations as of June 2006.
Suggested Remedy: *None*

Response: I disagree with the objection point that the FEIS needs to include the above information, however, most of the Mama-Cascade units in Myrtle Creek had been harvested, and slashing had occurred in some units, but the activity fuels were still awaiting treatment. Units 1-12 had been logged (therefore, canopies were thinned, but no treatment of surface fuels or smaller ladder fuels), Units 5 & 6 had been slashed, which addressed the ladder fuels, but not the surface fuels. Unit 7 had been slashed and fireline was put around it (the fuels were going to be treated with an underburn the following spring), and Units 15-18 and 27 had been partially harvested only. It was determined through the fire investigation following the fire that ignition began in a landing in Mama-Cascade Unit #7 below the main Myrtle Creek Road (FSR #633), west of Yellow Pine Creek in Section 16. Had the fire started in regular activity slash or in the smaller slash piles, other than the landing, firefighters may have been able to catch the fire before it escaped initial attack.

Issue 2 (FIRE) page 1:
The FEIS is required to provide high quality information that will indicate whether the Sundance and Trapper Peak fire of 1967 started on private lands, State of Idaho lands, or National Forest System lands, and indicate whether the fire started in an area where logging operations were ongoing or recently completed.

Suggested Remedy: *None*

Response: The FEIS discusses the Sundance and Trapper Peak fires on page 3-46 and on page 3-34. The following is information taken out of USDA Forest Service Research Paper INT-56 titled 'Sundandce Fire' (Anderson 1968):
The Sundance Fire started on Sundance Mountain east of the town of Coolin, Idaho and started its major run September 1st (the Myrtle Creek Fire in 2003 began on September 2nd). It was caused by a lightning storm that moved over the area a few weeks before the large run; lightning storms during this time of the year are very common and expected in North Idaho. It was discovered on August 23rd 1967 and was approximately 2,000 acres by August 30th and broke across dozer line on August 31st burning out the lower portion of Lost Creek. The major run began on September 1st, 1967.There is no indication that it started in logging slash or where logging operations were ongoing, however, forests burned by the Sundance Fire were mixed conifer interspersed with logged areas on both National Forest System, state, and private lands. Fuels, topography, and weather – including strong winds – played a large role in the fire run; firebrand material was spread 10-12 miles in advance of the main fire front. During the period of fastest spread, the Sundance fire spread at a rate of 640 acres every 6 minutes. It ended its run near Snow Peak at approximately 4,000 feet and worked down toward Bonners Ferry, Idaho, down Caribou Creek to an elevation of approximately 2,800 feet. It is important to note that the seasonal buildup of fire danger was similar to that experienced in the summer of 2003 and other big fire seasons we have had recently. This report and a brief article on the Sundance fire is available in the project file (document FF_016) for review.

Issue 3 (FIRE/PROCESS) page 2:
There is no information in the DEIS concerning a defensible fire space (DFS) as it applies to this project and the EIS does not address the fire analysis by Jack Cohen on home loss. The FEIS needs to analyze either a DFS only alternative, or a 300-foot maximum fire line "identified action" for the Myrtle Creek Project on Forest Service lands as described in a HFRA approved CWPP.
Suggested Remedy: *None*

Response: The FEIS does not discuss defensible fire space around homes or the analysis done by Jack Cohen on home loss because it is not applicable to the project area. Although the project is within the wildland urban interface, it is because of the municipal watershed and associated infrastructure. There are no residences or people living within the project area or adjacent to the proposed treatment area. I disagree that the FEIS needs to analyze a DFS alternative, as it is not applicable to this project. A DFS alternative would in no way meet the objectives of the project; even if there were homes in the project area, only treating enough to save the homes in the event of a fire, does not address protecting the municipal water supply. HFRA authorizes hazardous fuels reduction projects that reduce the risk wildland fires pose to the quality of a municipal water supply or to its maintenance (FEIS page 3-30).

Issue 4 (FIRE/PROCESS) page 3:
The FEIS needs to include an annual program of work (APW) for projects they intend to accomplish as required by HFRA.

Suggested Remedy: *None*

Response: The IPNF developed a 5-year fuels strategy in the Fall of 2004 in response to the National Fire Plan, 10-Year Comprehensive Strategy, and the Idaho Statewide Implemenation Strategy to treat hazardous fuel in collaboration with county fire working groups in the wildland urban interface. The strategy includes:

1. Projects currently in implementation
2. Projects where NEPA is complete
3. Projects where NEPA is underway
4. Future Forest Service projects in concept

The Myrtle HFRA project is described in the 5-year fuels strategy.

Issue 5 (FIRE/PROCESS) page 3:
The (D)EIS fails to provide documentation supporting suitability under HFRA for each acre proposed for logging treatments in the Myrtle Creek area – which is inconsistent with HFRA.

Suggested Remedy: *None*

Response: All treatments on all acres under the proposed action activities meet the definition of "authorized" under HFRA:

1. The proposed action is outside of potential wilderness
2. The project objectives are to protect the municipal watershed by treating hazardous fuels.
3. The proposed action is a result of a collaborative effort
4. the project is located on National Forest System lands
5. The project area is within the wildland urban interface, the proposed treatment area is within condition class 2 fire regime III and condition class 1 fire regime I
6. The project is consistent with old growth and large tree retention requirements

Issue 6 (FIRE/PROCESS) page 4:
The (D)EIS fails to provide any adequate supporting documentation for each acre in the Myrtle Creek project area that prescribes which category of WUI those acres fall into (i.e. within 1.5 miles of the boundary of a community at risk, outside 1.5 miles but within the interface as described in the CWPP, and outside both those areas).

Suggested Remedy: *None*

Response: The FEIS does provide supporting documentation. Page 3-30 describes the wildland urban interface as defined in the Boundary County CWPP to include the municipal watershed, as well as being 2 miles outside of place of human habitation and infrastructure to serve these points of habitation – including power and communication lines, rail lines, and transportation routes. Thus, all of the Myrtle Creek HFRA project area is within the interface; the lower portions being within 1.5 miles of the community at risk boundary, the remainder being outside.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1 (FIRE) page 5:
The objectors feel that the project as designed will not result in significant reductions in fire intensity, severity, and rate of spread and feel the project would lead to legacy resource problems and potentially increased fire risk.

Suggested Remedy: *None*

Response: In the FEIS page 4-56 through 4-63 modeling results are summarized for before and after treatments for fire intensity, severity, and rate of spread. Treated stands would generally show a decrease in fire behavior when modeled compared to untreated stands for the same weather conditions.
Project analysis summarized in Chapter 4 of the FEIS includes effects by resource of project alternatives including the proposed action.
Fire risk is the probability of a fire occurring. The project as designed is addressing the fire hazard by reducing the fuels, not necessarily the risk of fire occurring. We are trying to modify the fire behavior when a fire does occur. Fire risk is associated with weather and seasonal changes in fuels, such as decreased fuel moistures which make fuels more susceptible to ignition if an ignition source, such as lightning, is present. Unless additional ignition sources are realized, such as an increase in the amount of summer thunderstorms that passes through in the summer or increased human caused fires, it would be difficult to measure an increase in fire risk, especially from project activities. In the short-term, slash created from harvest will increase the fire hazard before the fuels are removed, burned, or piled and burned. Opening a stand often leads to increased wind to the forest floor which would aid surface fire spread, and also increased temperatures at the surface causing fuels to dry out. This is addressed on page 4-52 of the FEIS. The increases in those factors are offset by the reduction in fuels, which reduces the risk of crown fire and other extreme fire behavior such as torching and spotting. Reducing the fuels will aid in slowing fire spread, especially in a fire moving into a treated area from areas that remain untreated.

Issue 2 (FIRE) page 5:
The objectors are unclear on the relationship between permanent fuel breaks or fuel buffers. Will the ROD authorize ongoing activity to maintain fuel buffers into the future?

Suggested Remedy: *None*

Response: Fuel treatments are generally expected to have longevity of approximately 15 years based on natural fuels accumulations (the FEIS addresses this on page 2-15) "Removing ladder fuels from below and around the large old relic trees would lower the risk of stand-replacing crown fire in the future." Although, this would obviously be dependent on type and intensity of treatment and on what type of site it occurred. For example, the benefits of some regeneration harvests that regenerate with fire-resistant species such as larch, are still effective 20 years later at slowing fire spread. Again on page 2-15 - "For this project, periodic treatments such as thinning and underburning would be used every 15 to 20 years to develop and maintain historic values relating to…fuel loading and wildlife snags." This would be most applicable on dry-sites. The fire and fuels section also includes monitoring to address the effectiveness of treatments on page 4-70 section 4.3-D.3 Monitoring. In addition, the project file includes FVS-FFE runs on selected stands under Alternative 2 and the effects on fuels treatments on fuels and potential fire behavior into the future.

Issue 3 (FIRE) page 5:
The objectors are concerned that opening the stands through logging may exacerbate fire risk – increased drying and winds.

Suggested Remedy: *None, this issue was brought up in the ICL's comments to the DEIS; a response is in the 'Response to Comments.'*

Response*:* This issue is addressed in the fire and fuels section of Chapter 4 in the FEIS on page 4-52 under 'Weather.' "Removing canopy fuels will reduce the moderating effect of canopy on wind speed, so surface winds will likely increase in treated units under the proposed action. Scott and Reinhardt (2001) address this issue:"

"The increased fuel-level wind speed coupled with increased insolation also leads to lower dead fuel moisture in treated stands during summer. These two factors tend to exacerbate surface fire behavior. However, properly executed treatments also tend to reduce the crown fire potential."

In the surface fire behavior modeling that was used for analysis of this project, such as NEXUS and BehavePlus, wind reduction factors were adjusted based on the amount of canopy expected in treated and untreated stands (inputs and outputs available in the project file – for NEXUS doc. FF_081) to account for the effect on wind. Archived weather data was used from the WIMS system from local weather stations, thus recorded temperatures were used and assumptions were not made on how much temperatures would increase at the surface based on a decrease in canopy.

Issue 4 (FIRE) page 6:

The objectors refer to the 1995 Federal Wild land Fire Policy and state the importance of using fire as an "essential ecological process." The objectors question the fact that the proposed action will only restore fire to half the project area – rather use skidder logging on 500 acres to imitate the effects of repeated surface fire. When will the IPNF start implementing the policy?

Suggested Remedy: *None*

Response: The Forest Service is implementing the 1995 Federal Wildland Fire Policy – see FEIS page 3-29, bottom of page, and 3-30, top of page. Prescribed underburning is being proposed under the preferred alternative on half the treatment acres. Pile burning is being proposed on the remainder of the treatment area for fuels reduction and treating the surface fuels. Skidder logging is not being used to imitate the effects of prescribed fire. Treatments where prescribed underburning is not used, will still be followed up with treatments of the ladder fuels and surface fuels with piling of this material and the material created during logging. Where pile burning is being utilized over prescribed underburning, it is generally due to other resource concerns, such as hydrology, or where leave tree size is too small for an underburn as to not cause mortality in these trees with the fuel loads that will be present after harvest – thus the fuel loads will be piled and the piles burned.

Issue 5 (FIRE) page 6:
The FEIS is disingenuous to the fact that the 1987 IPNF Plan "does not provide direction for wildland fire use" – contradicting experience from the St. Joe Ranger District.

Suggested Remedy: None

Response: The FEIS page 3-29 addresses the Bonners Ferry Ranger Districts options for wildland fire use only, not the entire IPNF. The municipal watershed is in the wildland urban interface and options for wildland fire use do not and likely will not exist in the future. Ron Hvizdak adds that wildland fire use would be too risky in a municipal watershed that also contains a significant area in the wildland urban interface.

Issue 6 (FIRE) page 7:
The objectors state that the Fire Management Plan (2005) and the FEIS by reference disregard the fact that low-severity fire is only adapted to a small percentage of forest types on the IPNF and the FEIS oversimplifies fire regimes. The objectors want to know why the IPNF is using non-standard, outdated definitions and why it is not disclosed in the FEIS?

Suggested Remedy: The objectors ask that the five standard fire regimes (references to this provided, but the objectors do not provide the 5 fire regimes they refer to) be used rather than the 3 types of forest fires.

Response: Low-severity, and frequent fire (variable, but averages 38- 40 years historically) occurred on dry sites within the project area. Site-specific fire history data was collected and a summary on methods is available in the project file. Roughly ½ of the treatment area for Alternative 2 can be categorized in this low-severity regime. There are 5 fire regimes (I, II, III, IV, V) – referred to in the FEIS on page 3-38 table 3.11 and these include the 3 fire types (non-lethal, lethal, and mixed). Fire types are not the same as fire regimes – the FEIS is straight forward in presenting that. Any particular fire regime is a combination of expected severity and frequency of fire occurring – fire types summarize the degree of mortality to the overstory (referred to on page 3-34 top of page).

Issue 7 (FIRE) page 8:
The IPNF uses outdated standards and definitions for fuel models and this follows a theme in the FEIS for fire regimes, fuel models…

Suggested Remedy: *The IPNF should use the new standards contained in "Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model (Scott, J.H. and R.E. Burgan).*

Response: The original 13 fuel models are still applicable for use in this project and others if they fit the fuels being analyzed, which in this case they do (e-mail communications with Joe Scott, one of the developers of the dynamic 40 fuel models, available in the project file document FF_057). See the project file for site-visit documentation, which includes photos in which a fuel model determination can be made.

The 40 fuel models have not been field tested by practicing Fire Behavior Analysts long enough to fully determine their usefulness yet. At any rate, all fuel models (13or 40) are intended to show relative potential fire behavior, not actual. This is especially true for planning purposes. The 13 fuel models have been time tested for this area and have worked very well.

Issue 8 (FIRE) page 8: *The objectors state that the Agency erred in mapping FRCC at the stand scale.*

Suggested Remedy: *Landscapes are the appropriate scale at which to evaluate fire regimes (cited from the complete Guidebook to Fire Regime Condition Class).*

The objector's brought up FRCC in the DEIS comments but referred to site-specific data and HRV rather than scale used.

Response: The FRCC analysis was done at the landscape scale with different strata that represent the different vegetation types represented across the landscape. A stand level FRCC rating was not done. The landscape FRCC was assessed and then an FRCC was assessed for each stratum, which is appropriate for this project. The stand polygons are the basic vegetation units within the project area, so each stand is part of a greater sized stratum, of which many strata make up the larger landscape. The FEIS may be confusing…the stratum departures that make up the landscape are actually mapped and those are the percentages shown on the map provided in the FEIS on page 3-41 Figure 3.1, but the basic unit of vegetation delineation is the stand – each stand within a strata was mapped to that strata departure.

Issue 9 (FIRE) Page 8 and 9: *Why does the IPNF assume that the only kind of fire that will occur in the area will occur under very high to extreme conditions? Is there no intention of applying prescribed fire?*

Suggested Remedy: *The IPNF should analyze the different scenarios of fires burning under low and moderate conditions and incorporate that with the existing fire break created by the Myrtle Creek Fire in 2003 to accurately determine the practicality of fire suppression.*

Response: Fires generally cause control problems for suppression resources and exhibit fire danger such as torching, spotting, and crown fire that leads to large fire development when fire danger ratings are very high to extreme from the months of July-September in North Idaho. Indices of fire danger are good indicators of how fires may burn. FEIS page 4-63 under 'Fire Danger': Very high to extreme conditions were observed during the Myrtle Creek Fire in 2003 where indices of fire danger were above the critical 97th percentile (where only 3% of days are above that critical level for fire danger). We looked at the worst-case scenario, it provides the best comparison for looking at the effectiveness of treatments because with low or moderate fire danger, such as in the spring, all fires, if they could even get started in the first place, may be easy to control regardless of fuel loads because fuel moistures are so high (there is a moisture of extinction in all fuels where fires will not burn or spread). If we use the Myrtle Creek Fire as any kind of indicator of what to expect in the project area related to fire behavior, then we should be analyzing potential fire behavior under similar conditions as what was observed. The majority of fire starts are during this portion of the fire season; >85% being in July, August and September. In addition to these reasons, comparing fire behavior effects during this time makes sense; the associated drying during fire season leads to more uniform fuel beds (Scott and Burgan 2006) and thus more predictability with fire behavior modeling. Also, recent fire seasons have been consistently above "average" and we are seeing very high to extreme fire danger as being typical in August and September for this region.
However, modeling results do show a comparison for treated and untreated stands using "normal" and "dry" weather conditions – as shown in the FEIS page 4-52, Table 4.34.

The objector's statements that the Myrtle Creek Fire is a firebreak conflicts with issue #3 raised also by the ICL and Wilderness Society, since the Myrtle Creek Fire stands are opened and exposed to more solar radiation and wind.

Ron Hvisdak comments refuting that the Myrtle Fire 2003 is a good fuel break: The planned units will work extremely well in preventing an unwanted fire from reburning portions of the 2003 fire. There remains a significant amount of dead standing trees within the perimeter and at some point these dead trees will fall and create tremendous fuel loads. Since most of these stands are on a southerly exposure, a fire entering these stands will burn with high intensity, possibly impacting the watershed again.
Applying prescribed fire solely in a crown fire environment without some mechanical treatment is extremely risky, especially in a municipal watershed that is upwind of the urban interface. Lessons were learned at Los Alamos that should be adhered to in this case.

Issue 10 (FIRE, PROCESS) page 9-10:
The FEIS is in error by not analyzing Alternative 4 – prescribed fire without commercial timber harvest to accomplish project objectives. The Forest Service claims that objectives would either not be accomplished or the risk of escape would be too high and resource damage potentially too great.

Suggested Remedy: *1) For years, other National Forests and other land managers have successfully burned under similar conditions. Several methods can be employed to mitigate the escape risk you allude to. Probably the most effective in this case is multiple entries. Burn most open, dry sites first. Then burn "against" those areas, working one's way down slope. Or burn under conditions when only the upper layer of litter will burn. Then return with another burn, and yet another, each time burning against the previous burn. This can greatly mitigate escape risk in this way.*

2) All over the west, agencies and even individual property owners are using thin, pile and burn, followed by under-burning to mitigate fire hazard. This is being done with very few escapes.

Response*:* Provided by Ron Hvizdak – Fire Behavior Analyst on the Myrtle Creek Fire in 2003:

Certain groups often tout managing the Myrtle Creek area with prescribed fire only as the best way to manage the fuel situation, especially in the roadless portions of the watershed. It may sound like an easy thing to do, but there are serious risks that need to be considered before deciding if it is the proper tool to use. Following are some concerns that would need to be addressed before deciding to utilize a "fire only" approach to the municipal watershed and the roadless areas within it.

The moist stands being considered for prescribed fire are not stands where surface fire would be the predominant fire spread mechanism. These stands typically burn with crown fire, be it mixed or complete stand replacement. That is how they have burned for centuries and that is how they would burn today during our typical summer conditions given the condition they are in. Using prescribed fire in a crown fire environment can be done, but it is also extremely risky, especially in a municipal watershed where the prevailing winds would drive a fire down into the urban interface. The lessons learned from the Cerro Grande Prescribed Fire that resulted in a wildfire that burned into the community of Los Alamos in 2000 are completely relevant in this case. While the fuel types were different at Cerro Grande, they were similar to those in Myrtle Creek in that they were set up for a crown fire environment. We cannot afford to ignore those lessons learned.

To be able to prescribe burn a crown fire environment such as that in Myrtle Creek, managers would need to have significant firelines and fuel breaks along the ridge to the north and a spur ridge on the eastern edge. Since crown fires typically loft burning embers causing spotfires ½ mile or more downwind, the fuel breaks inside the control lines would have to involve mechanical treatment for a significant distance to reduce the chance of the crown fire burning across the control lines. If burning was attempted without good control lines and associated fuel breaks, the risk of escape would be high and consequences would be severe given the location of private land within the drainage as well as immediately downwind. Even with good control lines and fuelbreaks, however, there is no guarantee that the fire would not cause spotfires over the lines under certain critical weather conditions.

In order to meet the objectives of reducing the fuels (surface and ladder fuels) while retaining as much of the overstory as possible, burning would have to take place during summer-like conditions over a lengthy period of time (weeks) and might actually take a number of years to complete, depending on the size of the area to be burned. A backing fire would have to be utilized as much as possible in order to meet the objectives. A long term prescribed burn, however, also has risks, especially due to weather. Once the ignition has started, the weather will dictate what will happen and managers may not have complete control over how it burns some days. Given the fact that dry cold fronts are prevalent in late summer and fall (when a burn such as this would have to take place), there would be a good chance that there will be days when weather conditions will create critical fire behavior and result in an escape and/or objectives not being met.

A long-term burn would have daily impacts from smoke on the community of Bonners Ferry. The Myrtle Creek watershed drains down to the valley where Bonners Ferry is situated and the smoke will drain that way as well – every night. Morning inversions will keep the smoke trapped in the valley most days until the inversion breaks. It is likely that you would lose much of your support from the community for this burn as well as others and could affect the entire burning program for years afterwards.

Even if the prescribed burn were completed without any escapes, one would have to ask if the objectives could truly be met. There are no guarantees when burning in crown fire environments and there would be a huge amount of uncertainty as to what the results would be. Trying to kill the understory while saving the overstory in moist habitats is extremely difficult. There will be places where it can work and places where it cannot. However, if the prescribed fire kills the understory and some of the overstory, have the objectives truly been met? Temporarily, maybe, but in the long run likely not. The fire-killed trees will fall to the ground over the next 10-20 years and create a fuel problem in and of itself, thus defeating the purpose of the project. In recent years we have seen fires reburning areas that burned in 1988. These fires are burning intensely for a long duration in the dry summers and leaving very little organic matter. That's not the kind of scenario that one would want for a municipal watershed.

In summary, there are a number of reasons why using prescribed fire alone would not be advisable in the moist sites of Myrtle Creek:

Risk of escape would be high
Risk of not meeting objectives would be high
Risk of significant smoke episodes in the community of Bonners Ferry
Risk of uncertainty of results and the impacts on the municipal watershed

Another item often discussed is allowing wildland fire use to play a role in the watershed. However, the same risks apply for wildland fire use. While wildand fire use can and should play a role in many areas of the Northern Rockies, a municipal watershed with an urban interface immediately downwind is not a good candidate. Fire suppression will likely always play a role in this particular watershed.

That said, if the objectives of the Myrtle Creek project are to reduce the impacts of fire on the municipal watershed for Bonners Ferry, then the safest way would be to use mechanical means followed by prescribed fire. Mechanical treatments can reduce the risk of fire entering the crowns of the trees during the prescribed burning operations. This in turn would reduce the risk of escape as well as protect the overstory. Future fires burning through the treated stands would have less intensity and severity.

Properly managed stands also provide a safer environment for suppression forces to work in as well when a fire does start. The fire records show that fires start fairly often in the project area. When and where they will start is anybody's guess. But they will start and with the continuity of fuel in the drainage there will be some fires in the future that escape and burn more than is desired. Knowing that, treating areas on southerly aspects would be the most effective since south aspects are hotter, drier, and more exposed to the sun and wind. Fire history across the Northern Rockies has shown that most fires, especially most large fires, burn on south aspects. Therefore to be most effective at reducing the impacts to the municipal watershed, fuel treatments should concentrate on southerly aspects in the projects area, which in fact is proposed in the Myrtle Creek HFRA Project.

Finally, with good management, you can be fairly certain as to what the outcomes will be. With the use of wildland fire or prescribed fire only, there is a lot of uncertainty and risk and it would not be the prudent thing to do in the case of the Myrtle Creek municipal watershed. There is also a risk of doing nothing. However, the outcomes are then based on what nature dictates, because this area will burn again someday. Nature doesn't have a conscience and doesn't care how fires burn; therefore the impacts may not be what are desired as well.

Ronald J. Hvizdak – Fire Behavior Analyst
Retired Fire Manager

Issue 11 (Fire/Fuels) page 16:
The FEIS should map recently harvested areas of slash buildup because of their direct relevance to the project's effectiveness, and the relation to the project's purpose and need. The IPNF also needs to disclose that post-logging fuels treatment goes as far as the BD collection allows it to go and that such moneys rarely allow cleanup of all created slash. The cumulative effects of past, present and foreseeable activities, their relation to fire risk and intensity is a significant issue not adequately discussed in the FEIS.

Suggested Remedy: *The FEIS should map areas of slash buildup*

Response: During the lengthy analysis of this project, Big Mack Timber Sale (Myrtle Creek) and Salt Lick Timber Sale (Snow Creek) and one small unit of Mama Cascade (Unit 11 – 9 acres) were in various stages of completion of project activities. Big Mack is 142 acres –west of Mack Creek. Over the past two years, all the slash has been treated for Salt Lick, and Unit 11 of Mama Cascade was underburned in the spring of 2006. So, 142 acres of activity fuels remain untreated on National Forest System lands in the 28,000 acre project area currently. Slash treatments that involves prescribed fire and piling with pile burning is planned on those acres.

FEIS- page 4-67: all fuels treatments do not occur at once. Prescribed underburning and pile burning tends to occur over a few seasons, piles are burned in the fall.

Collected BD allows for efficient clean-up of created slash. In the wildland urban interface where it is a priority to treat fuels adequately, natural fuels dollars can cover the cost of slash clean-up where BD is lacking, and has in many cases on the district.

Fire and fuels cumulative effects analysis was adequate and describes timber harvest (implies all the aspects of timber harvest, including the slash left on the ground before it is treated) as a reasonably foreseeable future action (FEIS page 4-67). Timber harvest activities and fire suppression will affect large scale fire behavior as fire moves from dense to open stands and

depending on how activity fuels are treated in harvested stands will affect expected surface fire behavior. Past timber harvest activities would have altered fuel loadings, arrangements, species composition, etc. All timber sale maps for past and present activities are in the project file.

D. VEGETATION

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1 (VEGETATION) (p.19):
The proposed large openings between three and five acres in size are intended to promote regeneration of seral species such as Western white pine, Western larch and Ponderosa pine…The FEIS does not include scientific evidence for a minimum 3 to 5 acre opening to regenerate seral species. Research from the Forest Service Rocky Mountain Research Station in Moscow, Idaho show seral species can regenerate in openings less than an acre in size (Jain et al 2004).

Suggested remedy*: None*

Response: The three to five acre openings referenced in the FEIS (Table 2-8, p.2-16) relate to treatments in dry forest types where the objective is to provide openings for ponderosa pine and western larch regeneration. White pine is erroneously listed as a species to regenerate under the group selection prescriptions for dry forest types. The research conducted by Jain et al (2004) dealt specifically with the ecological requirements for white pine regeneration. This research is not applicable to the group selection prescriptions listed in Table 2-8 of the FEIS.

In terms of regeneration requirements of other seral species, western larch regeneration is the most shade intolerant species within its range, relegating it to an exclusively seral role (Minroe 1979; Fiedler and Lloyd 1992) and even beneath a light overstory stand casting 47 percent shade, ponderosa pine saplings grew only about half as rapidly as its associates. Ponderosa pine loses vigor in dense stands (Oliver and Ryker 1990).

Issue 2 (VEGETATION) (p.20):
Numerous credible investigators have consistently recommended retention of all large trees in restoration projects (Allen et al 2002; DellaSala et al 2004; Dombeck et al 2004; Omi and Martinson 2004). The FEIS does not include any reference to a diameter cap limitation, nor does it provide adequate before and after descriptions for their "fuel reduction" treatments.

Suggested remedy: *all*

Response: The proposed treatments are designed to reserve the larger diameter trees and removals would focus "*largely* (emphasis added) on small diameter trees," as required by HFRA. As discussed in more detail in the discussion regarding large trees (Section IV, p.48), 95% of the trees removed would be less than 14" DBH. Given "largely" means "mainly", or "mostly" and not "all," which means "each and every one," 95% would appear to meet the "largely" requirements of HFRA. In terms of "diameter caps" there are none in HFRA, nor our existing Forest Plan. For good reason, as stated in the 2001 Roadless Rule, "Such determinations are best made through project specific or land and resource management plan NEPA analyses, as guided by ecological considerations." When dealing with diverse stand structures, species compositions and fuel loadings such as in the Myrtle Creek HFRA project area, a simple diameter cap is not recommended because it " is a convenient marking guideline but a poor prescription variable" (Scott and Reinhardt, 2007). Tree size is also relative given the various ecosystems and their productivity potential. (Graham and others, 2007) from the adjacent Priest Lake Ranger District consider trees less than 12" dbh as small, while (Brohman and others, 2007) consider trees 10" dbh and less as small trees.

Issue 3 (VEGETATION) (p.48):
The HFRA requires that covered projects outside of old growth focus "largely on small diameter trees."

Suggested remedy: *None*

Response: The HFRA Act does not define *small diameter trees*. Section 102 (f)(1)(A) and (B) of the law directs projects to focus

- "largely on small diameter trees, thinning, strategic fuel breaks, and prescribed fire to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type (such as adverse soil impacts, tree mortality or other impacts); and"
- "maximizes the retention of large trees, as appropriate for the forest type, to the extent that the trees promote fire-resilient stands."

Having said that, the "Myrtle HFRA –Variable Plot Summary" (Project File) for proposed units in Myrtle Creek discloses that the average size tree proposed for *harvest* would be about 9.5" DBH while the average *residual* tree would be about 18.5" DBH. On the Snow Creek side of the project estimated average harvest trees would be about 10.5" DBH and average residual trees would be about 17.6" DBH ("Snowtree_list.pdf"). Clearly, the proposed prescriptions focus on retention of the largest trees and removal of the smallest trees in the stand.

Additionally, for those portions of the project within Inventoried Roadless Areas the project is designed to meet the intent of the 2001 Roadless Rule. As stated in the Rule:

- "Because of the great variation in stand characteristics between vegetation types in different areas, a description of what constitutes 'generally small diameter timber' is not specifically included in this rule. Such determinations are best made through project specific or land and resource management plan NEPA analyses, as guided by ecological considerations such as those described below."

- "As described in the FEIS (Vol. 1, 3–76), areas that have become overgrown with shrubs and smaller diameter trees creating a fuel profile that acts as a ''fire ladder'' to the crowns of the dominant overstory trees may benefit ecologically from thinning treatments that cut and remove such vegetation. The risk of uncharacteristic fire intensity and spread may thus be reduced, provided the excess ladder fuels and unutilized coarse and fine fuels created by logging are removed from the site (FEIS Vol. 1, 3–91)."

Issue 4 (VEGETATION) (p. 48):
The Table 2.14 on page 2-39 of the FEIS indicates that 242 acres would be logged in two stands of old growth. The FEIS also states that the current structure of old growth stands are within the estimated historic range at 28%. It is stated on page 4-73 of the FEIS "Based on data taken from similar prescriptions on the District it is estimated that the average size tree harvested would be less than 11 inches DBH and that 90% of the trees would be less than 14 inches DBH". It is also stated on page 4-73 that Douglas-fir, grand fir and lodgepole pine are the primary species that would be logged with Alternative 2.

Suggested remedy: *None*

Response: It is unclear what point the objectors are trying to make. The project area does contain 28% old growth, or more than 7,800 acres (FEIS, p.4-74). The proposed treatments represent 3% of the total old growth in the project area and treatments in dry forest old growth will not result in a change in the Forest's old growth allocation. The remaining 7,800-plus acres of old growth, where *no* treatments are prescribed, are cedar, hemlock, and subalpine fir types that developed under completely different disturbance regimes. Comparing these types to the dry forest old growth is like comparing apples and oranges. However, *all* old growth types are a potential fuels risk, but very early in the process (November 30, 2004 KVRI Notes) the Forest Service made it clear to the KVRI sub-group that, "current policy is to not enter moist site old growth areas." This is precisely because of the different ecological characteristics these forest types.
The discussion regarding past treatments in dry forest old growth were provided in the FEIS to provide the public with some context of past treatment effectiveness dry forest old growth. Included in the project file are documents OG (a)-07, 08, 09, and 10. These documents include monitoring data from the Myrtle-Cascade and Dry Wall projects where dry forest old growth was treated. These documents include density and species composition data, for both cut and residual tree data, which support the statements made on page 4-73 of the FEIS.

Issue 5 (VEGETATION) (p. 48):
The FEIS did not disclose the approximate number of tree with a DBH greater than 14 inches that would be logged with Alternative 2 in spite of the request for this information by Objectors KEA in their June 30, 2006 comment letter. The logging information displayed in Table 2.7, page 2-28 of the DEIS, shows that 966 acres would be logged by helicopter. The helicopter logging of 966 acres and the expected high bids of $234/MBF clearly indicates that a significant amount of large trees, such as Douglas fir and larch would be logged from the 966 acres. In order for the timber sales to generate at least

$1.3 million in net revenue after all reforestation, fuels reduction, road work, sale administration, and planning expenses are accounted for, it is apparent that a significant amount of large trees are planned to be logged.

The FEIS also did not include any information indicating the maximum DBH of the trees proposed for logging with Alternative 2. The logging of large diameter trees with Alternative 2 directly conflicts with the HFRA requirement for large tree retention.

The FEIS must supply high quality information, NEPA at 40 CFR 1500.1(b), regarding the number of trees with a dbh greater than 14" that would be logged as a result of Alternative 2. The FEIS is required to indicate if this data is incomplete or unavailable, 40 CFR 1502.22.

Suggested remedy: *None*

Response: Timber cruise information included in the project file ("snow_creek_cut_tree_dbh" and "myrtle_creek_cut_tree_dbh") shows that approximately 95% of the harvest trees would be less than 14" DBH (the FEIS, p. 4-73, estimated 90% of the trees would be less than 14"; based on this updated information a *greater* percentage of the trees harvested would be less than 14"). As discussed in earlier responses the average cut tree sizes are expected to be less than 11" and conversely the average residual trees are expected to be larger than 17' DBH. We do expect the sales that result from fuels reduction activities to exceed costs, although the receipts would not be as high if the focus of the Myrtle Creek HFRA was timber production. If that was the case, there would be considerably more timber volume removed in larger tree classes. In terms of "largest" trees proposed for harvest the cruise information shows that an occasional tree larger than 20" DBH would be harvested. Based on the cruise information it is expected less than 0.1% of total trees harvested would be this large. These would be rare instances where trees that are high-risk for insect and disease (e.g., examples would be lodgepole pine and grand fir).

Finally, with regards to this issue raised on tree sizes, "The FEIS must supply high quality information, NEPA at 40 CFR 1500.1(b), regarding the number of trees with a dbh greater than 14" that would be logged as a result of Alternative 2," it must be asserted again that are no requirements in NFMA, NEPA, HFRA, the Roadless Rule, or any other statute, rule, or Forest Manual direction regarding the implied, yet arbitrary, 14" "standard" suggested by the objectors. The proposed prescriptions, and numbers and sizes of trees that would be harvested, are based on the fuels management objectives that would provide protection for the municipal watershed from unwanted fire. When implemented these prescriptions would *not* reduce the likelihood of fire occurrence, but our analysis shows fire behavior would be modified in a manner that would provide fire managers a better opportunity to keep the fire from becoming unwanted crown fire.

Issue 6 (VEGETATION) (paragraph 55 of Rhodes declaration – TLC objections)
The EIS fails to reasonably disclose peer-reviewed scientific information that indicates the EIS's assessments of changes from historic forest structure and fire behavior are likely in error.

Suggested remedy: *None*

Regional Review and Response: Baker et al (2006) are concerned that the, "Forest restoration in ponderosa pine and mixed ponderosa pine–Douglas fir forests in the US Rocky Mountains has been highly influenced by a historical model of frequent, *low-severity* (emphasis added) surface fires developed for the ponderosa pine forests of the Southwestern USA. A restoration model, based on this low-severity fire model, focuses on thinning and prescribed burning to restore historical forest structure."

Baker et al (2006) also states, "The goal of ecological restoration is to enhance the resilience and sustainability of ecosystems through management decisions that return them to a state considered to be within the historical range of conditions prior to significant impacts from EuroAmerican land uses (Landres et al., 1999). To achieve ecological restoration, as well as ecosystem-based management in general, managers need to understand how past disturbances shaped landscapes prior to permanent EuroAmerican settlement (Veblen, 2003)…It is impossible to determine the correct restoration model for a *particular place* (emphasis added) without some collection of information on the site to be restored (White & Walker, 1997; Veblen, 2003)."

There are several references in the FEIS regarding the variability of fire frequency in dry forest types that is *specific* to the project area. On page 3-33 the FEIS states, "For Myrtle Creek and Snow Creek the *average* (emphasis added) fire return interval on dry south slopes has been estimated at 38-40 year (Behrens 2003 and Zack 1994)." The fire history reference document in the project record [(OG(b)-07] discusses this variability. For example, the range of fire return intervals for the south slopes of Myrtle Creek was estimated at 17 to 74 years. Page 3-54 of the FEIS discusses the similarity of fire intervals in the project area as compared to similar forest types in the Northern Region. In summary, the District did indeed collect "information on the site to be restored" as suggested by Baker et al (2006).

As discussed in Baker et al (2006), "At the landscape scale (i.e., a few hundred ha or more) in Rocky Mountain ponderosa pine–Douglas fir forests, variable fire severity and variation in environment led to a mosaic of patches naturally varying in age and tree density. Some patches were large." Baker et al (2006) continues, "Other landscapes had finer-scale mosaics of burned and unburned forest of various ages (Graves, 1899)." In essence, the proposed prescriptions in these dry forests are designed to manage for this type of variability, which likely occurred historically. As stated in the FEIS, p. 2-15, "Group selection prescriptions (uneven-aged management) would create a mosaic of forested openings and thinned areas. The openings would treat the areas in the stand with the highest risk of insect, disease and ladder fuels. Ponderosa pine and larch would regenerate in these openings; the thinned areas would favor the retention of the largest existing ponderosa pine, Douglas-fir, and larch." Page 4-73 of the FEIS goes on to discuss the desire to manage for this variability, "the average target density for the proposed group selection prescriptions in dry forest old growth would be 80-100 $ft^2$of basal area…Some areas where old growth-sized trees dominate would exceed the average density and may be as high as 200 ft^2. Other areas, with predominantly small diameter trees, would be opened up to less that 60 ft^2." Further on p.4-73 the FEIS states, "Subsequent entries would be designed to approximate historic disturbance cycles." Based on fire history data *specific* to the project area there is evidence that, "some intervals were less than 20 years and some were more than 50 years."

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1 (VEGETATION) (p.5)
Logging has been shown to stimulate and exacerbate root disease conditions. Logging, even in the proposed commercial thinning units, has the potential to result in increased mortality to remaining leave trees.

Suggested remedy: *None*

Response: Hagle (2005) addresses the potential effects of thinning in stands impacted by *Armillaria* root disease if Douglas-fir and grand fir compose more than 30% of the leave trees:

- "A landowner may be sorely tempted to thin a root diseased stand, leaving the best-looking Douglas-fir and grand fir, with the expectation these trees will experience "increased vigor" and thus resist root disease. The evidence is not clear at this time whether thinning accelerates damage, but it is clear that ***mortality rates will not decrease in disease-susceptible species***."

Hagle (2005) also goes on to state:

- "Managing for disease tolerant species is usually the most effective and cost-efficient means of overcoming root disease."
- "Management of stands impacted by *Armillaria* root disease should emphasize promotion and maintenance of seral species. Silvicultural approaches that achieve this objective are recommended even for stands with a light root disease severity rating. Managing for disease susceptible species, and harvesting the disease tolerant species, will result in ever-increasing amounts of disease inoculum and only serve to worsen root disease severity and reduce management options for the next rotation."
- "Long-term root disease management should take a "***do no harm***" approach by maintaining and promoting mature seral species and their natural regeneration, planting with disease tolerant species, and taking no actions which will increase inoculum levels."

As discussed in several locations in the FEIS this is part of our long-term objective with our proposed fuels treatments,

- p. 2-16, Table 2-8, "In order to protect the stands from crown fire and restore the historical stand structure, group selection cuts from three to five acres in size would be used to regenerate the areas of the stand that are departed from historical stand composition and structure values and will often encompass overstocked areas and root disease centers in areas of susceptible Douglas-fir, allowing the area to be reforested with relatively root disease resistant seral species such as ponderosa pine, larch or white pine."
- p. 3-44, "Douglas-fir is at an age where combinations of root diseases and bark beetles begin to create high mortality."

- p. 3-52, "Root diseases are common in the moist Douglas-fir, grand fir, and high elevation cool subalpine forests in the Northern Rockies Province. Several pathogens are involved, even in the same stand, so it is usual to consider them as a group. The main hosts are Douglas-fir and true firs (USFS 1999). Root diseases have apparently increased significantly over the past several decades, with the several-fold increase in host abundance (USFS 1999). Of particular concern is the dominance of Douglas-fir on all forest types in the project area. One of the most effective management tools is to reestablish resistant species on these sites, i.e., long-lived seral species (Williams et al 1989 and USFS 1999)."
- p. 4-92 "The fuels reduction treatments are designed to protect the larger overstory trees (also future seed sources) from crown fire, restore historical stand structure, and allow areas affected by root disease to be reforested with seral species that are relatively resistant to root disease."

Issue 2 (VEGETATION) (p.13)
The FEIS does not provide adequate discussion of the effects from regeneration vs. intermediate logging prescriptions and the resulting impacts to sediment reduction and water quality protection. We believe that a more thorough analysis is needed to map areas suitable for fuel reduction treatments and develop the silvicultural prescription with the least impacts on the watershed.

Suggested remedy: *None*

Response: The silvicultural prescriptions have been designed to meet the purpose and need of the project FEIS 1-1.
1) Maintain Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry;
2) Reduce hazardous fuels in the Myrtle Creek watershed and adjacent forests;
3) Trend vegetation in Myrtle Creek watershed and adjacent forest towards conditions that would be less susceptible to catastrophic fire, while maintaining and restoring habitat for fish and wildlife species.

The silvicultural prescriptions have been designed with multiple criteria in mind. All the prescriptions have been designed to meet HFRA, Sec, 102 (e)(2) and will feature a reduction in fuels, trend the species composition and structure of the stands towards sustainable conditions less susceptible to crown fire. Refer to the FEIS 3-62, 63. The acres of regeneration and thinning prescription have been integrated into the watershed cumulative effects analysis in the FEIS starting on pg. 4-1.

E. OLD GROWTH

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1 (OLD GROWTH) (p. 49):
1. Violation of applicable Forest Plan Standards. The Myrtle Creek Project Violates NFMA and the IPNF Forest Plan Standards 10(b), (c), (e), and (f).

The proposed project proposes to log approximately 242 acres of dry site old growth stands, including 83 acres of allocated old growth and 159 acres of potential old growth. (FEIS 2-10).

Pursuant to the National Forest Management Act (NFMA), the Forest Service must demonstrate that a site-specific project would be consistent with the Land Resource Management Plan (LRMP) for the entire forest. Neighbors of Cuddy Mountain v. US Forest Service, 137 F.3d 1372, 1376-77.

Suggested remedy: *None*

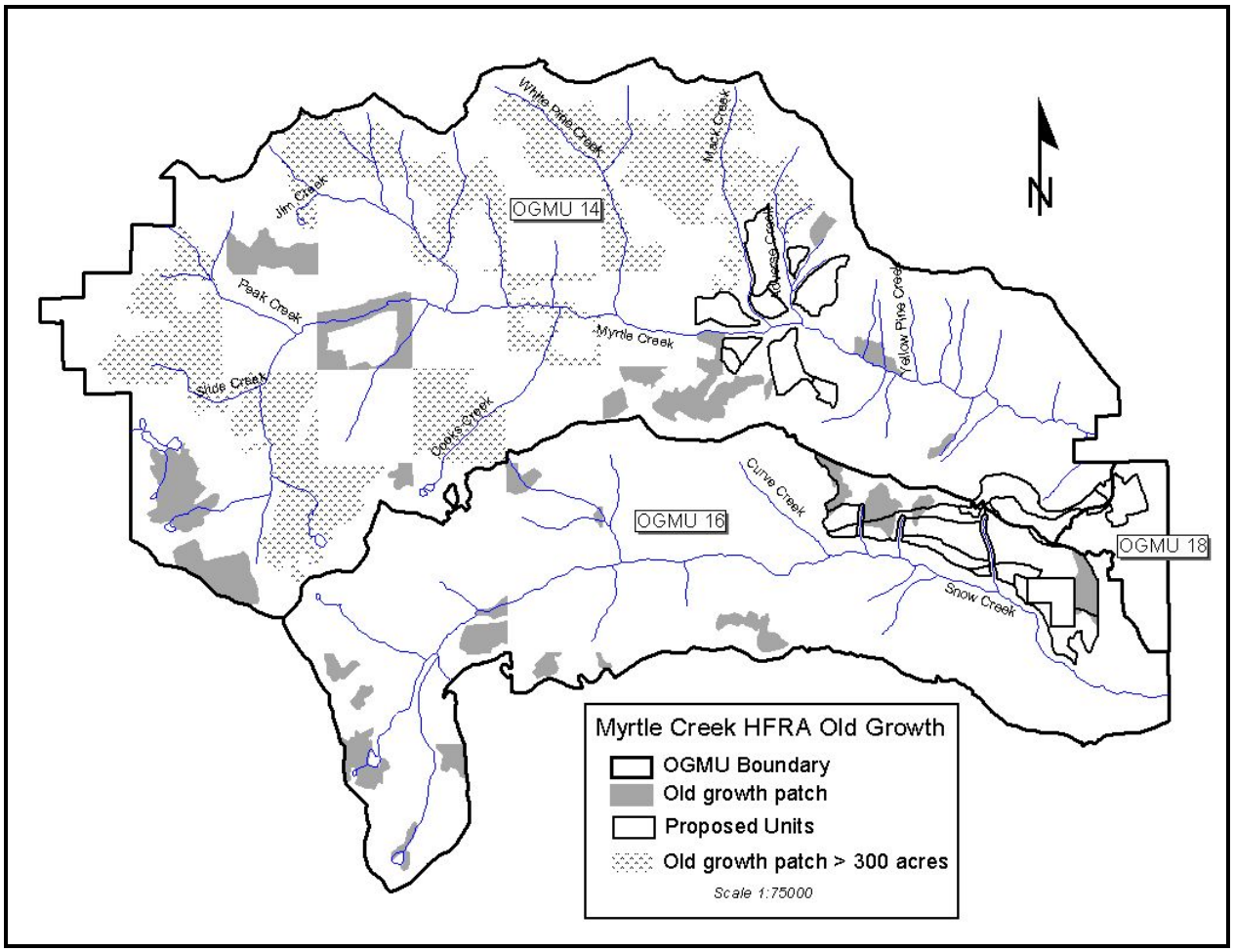
Response: As stated in the FEIS, p. 4-72, Standard 10(b) calls for maintaining "at least 10% of the forested portion of the Idaho Panhandle National Forests as old growth". The Forest Plan identified 2,310,000 forested-acres on the Idaho Panhandle National Forests. Therefore, the forest plan standard requires maintaining 231,000 acres of old growth on the forest. Based on two independent inventories and monitoring tools (FIA and IPNF stand level inventory) the IPNF is maintaining over 12% allocated old growth on its forested acres. As part of the Forest Plan strategy, 65,853 acres (16.7%) on Bonners Ferry Ranger District are allocated for old growth management (USDA 2005). The Myrtle Creek HFRA project complies with Forest Plan standard 10 (b).

The Myrtle Creek HFRA also included an old growth data review [Project File Doc. OG(a)-03] to meet compliance with Standard 10(c). The FEIS, p. 4-72, documents compliance with 10(c). For distribution purposes, the Forest Plan directs Districts to select and maintain at least 5% of the forested portion of those old-growth units that *have* 5% or more old growth. The Myrtle Creek HFRA assessment area intersects OGMUs 14, 16 and a small portion of 18.

OGMU 14 is 17,555 acres and contains 7,074 acres (40%) of old growth.
OGMU 16 is 9,395 acres and contains 753 acres (8%) of old growth.
The portion of OGMU 18 within the assessment area (791 acres) contains zero acres of old growth.

As stated on p. 4-72 of the FEIS Standard 10 (d) states that "Existing old growth stands may be harvested when there is more than 5% old growth in an old-growth management unit, and the Forest total is more than 10%. The proposed action includes entry into allocated dry-forest old growth. Silvicultural prescriptions would be designed to retain the old growth ponderosa pine, western larch, and Douglas-fir, in the treated stands. Additionally, trees from smaller size classes would be retained to provide additional structural diversity and replacement old growth for the future. In the long-term, these conditions would be more sustainable. *The proposed action would result in no net loss of allocated old growth* (emphasis added). The Myrtle Creek HFRA project complies with Forest Plan standard 10 (d).

For clarification the treatments in dry forest old growth are proposed only in OGMU 16 (Snow Creek). The FEIS, p. 2-13, Figure 2-1 displays the proposed treatments under Alternative 2. Figure 4-10 on p. 4-75 of the FEIS displays the location of old growth and OGMUs in the project area. The figure below displays the location of treatment units in relation to old growth stands in the project area, clarifying that only OGMU 16 includes treatments in old growth. Given OGMU 16 is currently at 8% old growth, the Forest total is more than 10% based on two independent inventories, and the proposed treatments *would result in no net loss of allocated old growth*, the project complies with 10 (d), which states, "Existing old growth stands may be harvested when there is more than 5% old growth in an old-growth management unit, and the Forest total is more than 10%."



Standard 10(e) is a Forest level standard and as stated on p. 4-72 of the FEIS it states, "old-growth stands should reflect approximately the same habitat type series distribution as found on the IPNF. As discussed in the 2004 IPNF Forest Plan Monitoring report (p.72), old growth on the IPNF does reflect approximately the habitat type series distribution of the forest. The OGMUs within the assessment area are dominated by subalpine fir (58%), western hemlock (28%), western red cedar (10%) old growth, Douglas-fir (4%) and grand fir (<1%) forest old growth. As discussed in Chapter 3 the amount of old growth in each forest type is directly related to past disturbance patterns. The Myrtle Creek HFRA project complies with Forest Plan standard 10 (e)."

The FEIS demonstrates compliance with Standard 10(f) on p.4-72 of the FEIS where it states, "The Forest Plan also has standards for size of old growth stands (Forest Plan II-29). Preference is to have at least one stand per OGMU over 300 acres and stands should be at least 25 acres. Preference should be given to a contiguous stand; however, the stand may be subdivided into stands of 100 acres or larger if the stands are within one mile."

"This old growth review showed that all of the contiguous old growth patches larger than 300 acres are located in OGMU 14, of which eight patches are larger than 300 acres. Three patches in OGMU 14 (Figure 4-10) are actually larger than 1,000 acres, and one of these patches in the Slide Creek area is nearly 1,900 acres. Six other patches in OGMU 14 are larger than 100 acres. Three stands are less than 25 acres, but these stands are generally less than a quarter-mile from other larger patches of old growth. In OGMU 14, stands less than 25 acres in size account for about 0.4% (25 acres) of the total old growth. Consequently, even if these acres were not considered as part of the allocation, OGMU 14 would still meet old growth standard 10(c), which calls for maintenance of 5% old growth in each OGMU, if available."

"OGMU 16 contains considerably fewer acres of old growth than OGMU 14. Only one patch of old growth is larger than 100 acres, and five patches are smaller than 25 acres. In OGMU 16, stands less than 25 acres in size account for about 1.1% (81 acres) of the total old growth. Once again, even if these acres were not considered part of the allocation, OGMU 16 would still meet old growth standard 10(c)."

"The Myrtle Creek HFRA project complies with Forest Plan standard 10 (f)."

The Picken declaration was addressed by IPNF Forest Ecologist Dr. Art Zack, Phd. Dr. Zack's review of this assessment is documented in the project file [Doc. OG (b)-15]. As stated on page 1 of the assessment"

"Three assessments of old growth on the Idaho Panhandle National Forests (IPNF) are now available. These are:

- Forest Inventory and Analysis (FIA) data used to calculate IPNF Forest-wide and mid-scale old growth percentages.
- IPNF stand map displaying all stands allocated for old growth management, with old growth allocation recorded in the TSMRS database, and total allocated acres reported.
- A 2004 Lands Council of Spokane report titled Lost Forests: An Investigative Report on the Old Growth of North Idaho (Picken, 2005)."

"The two independent Forest Service assessments, done by different people, using different methodologies, produce very similar old growth results, and support each other's validity. The FIA estimates are based upon a statistically sound sample design capable of characterizing forest vegetation at the national forest scale. The IPNF stand-level old growth map represents a census of those stands allocated for old growth management to meet Forest Plan standards. Both Forest Service assessments show approximately 12% of forested lands on the IPNF as old growth. The total allocated IPNF old growth stand acres are within the 90% confidence limits of the FIA estimates. Both Forest Service assessment methods and results are disclosed to the public."

"The Lands Council Report provides no independent inventory to determine how much old growth exists on the IPNF. The Lands Council Report also does not address estimates of IPNF old growth derived from FIA data. The Lands Council concentrates only on the IPNF stand-level map. Their report claims they sampled less than 1% of the Idaho Panhandle National Forests' identified old growth stands, and "found that 70 percent did not meet the FS's own minimum criteria for old growth." Their report is contradictory and unclear about what criteria they used for making old growth determinations. When questioned, Lands Council representatives refused to disclose (and likely did not have) any statistical sample design to assure that their sample was representative and unbiased. (Without a sound sample design there's no basis for using their small sample to draw conclusions about Forest Service old growth.) There are strong indications their selection of sample stands, plots, and trees was biased. They refused to make their data available. The Lands Council tree sample was inadequate for assessing ages of older trees. They were using obsolete versions of Forest Service databases (even though current versions were available to them), and some stands they claim to have sampled are not even classified as old growth by the Forest Service. The Lands Council report has no statistical design to assure lack of bias, its sampling procedures are not adequate for making old growth determinations, and it produces inexplicable results that are not credible as a valid sample of old growth conditions on the IPNF."

Issue 2 (OLD GROWTH) (p. 49-50):

2. Violation of applicable Forest Plan Standards. The Myrtle Creek Project Violates NFMA and the IPNF Forest Plan Standards 10(b), (c), (e), and (f).

The HFRA of 2003 contains old growth protection language that the Forest Service is required to follow.
I n several substantive ways the HFRA old growth protection requirements are more substantial than that of the NFMA, the IPNF Forest Plan, and other laws. The HFRA requires the Forest Service "to fully maintain, or contribute toward the restoration of the structure and composition of structurally complex old growth stands according to the pre-fire suppression old growth conditions characteristic of the forest type, while considering the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old growth structure" H.R. 1904-7 and 1904-8.

Suggested remedy: *None*

Response: The District completed a "Review of Old Growth Management Direction for Myrtle Creek HFRA" and this documented in the FEIS, p. 3-62 through 3-63 and the project file [Doc. OG(b)-14]. As documented in the FEIS, "The Healthy Forest Restoration Act [HFRA, Sec. 102 (e)(2)] requires that projects, 'fully maintain, or contribute toward the restoration of, the structure and composition of old growth stands according to the pre-fire suppression old growth conditions characteristic of the forest type, taking into account the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old growth structure.'"

In developing its prescriptions for dry forest old growth types the District considered relevant scientific information made available since the adoption of the management direction in its current Forest Plan. A summary of this scientific information documented in the FEIS includes:

- Absent fire, understory trees out-compete the old trees for moisture and nutrients and the old trees loose vigor and often succumb to insects and disease, or the stress imposed by even low-moderate intensity fires (Arno et al. 1995 and Biondi 1996).

- Treatments in an old growth larch and ponderosa pine stand on the Lolo NF in the late 1990's showed old growth trees had increased sap flow, higher foliar nitrogen content, and higher foliage production indicating improved tree vigor and increased resistance to insects and disease (Sala and Calloway 2001).

- Stone et al (1999) also found that restoration of pre-Euro-American stand structure by thinning improved vigor of ancient, presettlement ponderosa pines in northern Arizona. Increased canopy growth and increased uptake of water, nitrogen, and carbon indicated improved tree vigor. They concluded in their study that the negative influence of postsettlement trees on presettlement trees likely resulted from competition for soil resources. Their conclusion agreed with correlative studies conducted at their study site by Sutherland (1983) and Biondi (1996).

- Pfister (2000) discussed the types of old growth where some of level management is appropriate. First, initial restoration cutting treatments appear necessary to restore old-growth stands historically sustained by relatively frequent low to mixed-intensity fire. The most extensive example would be old-growth ponderosa pine and ponderosa pine/Douglas-fir stands. Overstocked stands with sapling pole understories are at high risk to stand replacement fire, and may not have the capacity to regenerate themselves following such fires. The appropriate treatment is to *significantly* (emphasis added) reduce the density of understory *and* (emphasis added) overstory trees established since Euro-American settlement, and remove them from the site. Following cutting, restoration of fire, through prescribed burning, is necessary if such stands are to perpetuate themselves in place, consistent with historic disturbance processes, intervals, and intensities.

In essence, the Pfister (2000) recommendations match those proposed in dry forest old growth in the Myrtle Creek HFRA verbatim (emphasis added).

The FEIS on p.3-63 concludes, "we have determined the Forest Plan does not need to be amended to incorporate new information because the plan says to maintain certain amounts of old-growth. The plan does not prescribe how to maintain old growth nor does it preclude harvest to fully maintain, or contribute toward the restoration of, the structure and composition of old growth stands according to the pre-fire suppression old growth conditions characteristic of the forest type, taking into account the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old growth structure. Harvest in old-growth stands meets the requirements of both the Forest Plan and the direction in HFRA, therefore no further adjustments are necessary."

Issue 3 (OLD GROWTH) (p. 50-51):

The Myrtle Creek HFRA FEIS does not include information regarding the logging of old growth in the areas treated within the Myrtle Cascade project.

Suggested remedy: *None*

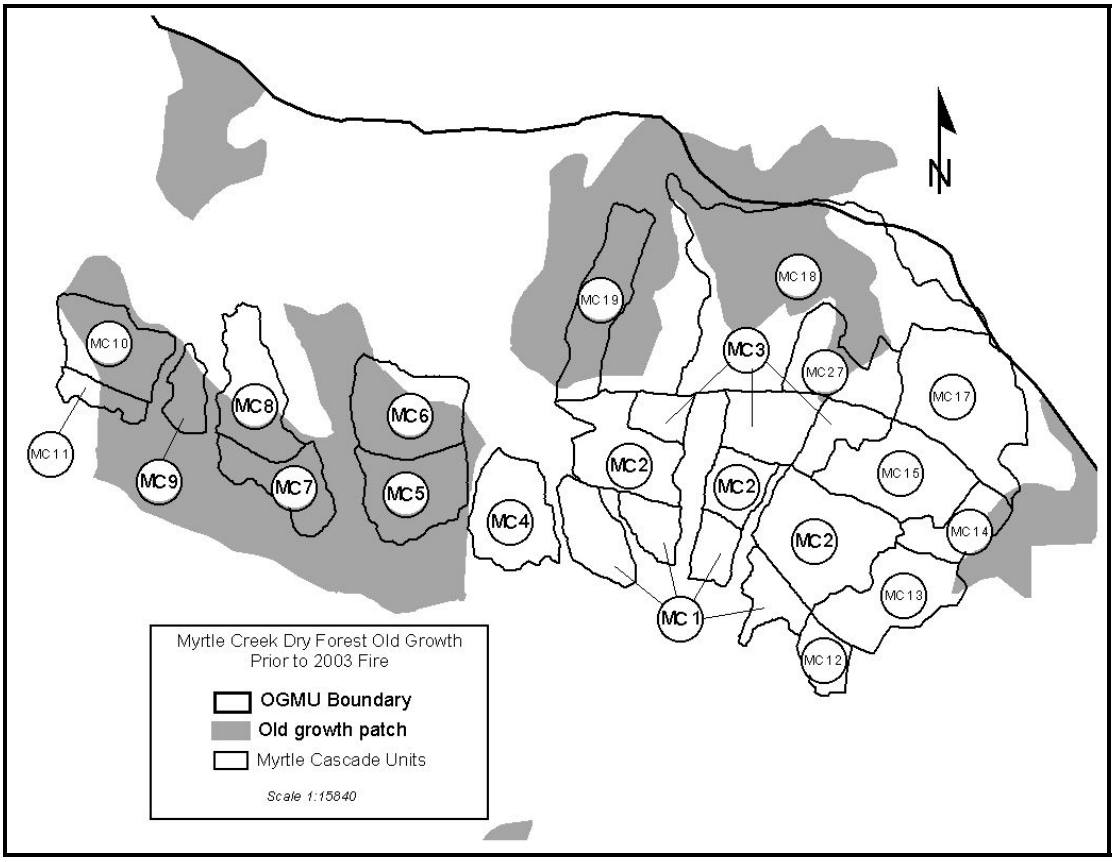
Response: The FEIS, p. 3-48 includes information regarding harvest that occurred in dry forest old growth under the Myrtle-Cascade EIS. Figures 3-10(a), (b), and (c) show an old growth stand before and after harvest, and after the 2003 Myrtle Creek fire. As stated in the FEIS, p.3-4, Figure 3-10(a), "shows a stand that contained several old growth ponderosa pine, western larch and Douglas-fir, which are not visible because they are crowded by a dense layer of grand fir and Douglas-fir that regenerated after the 1926 fire."

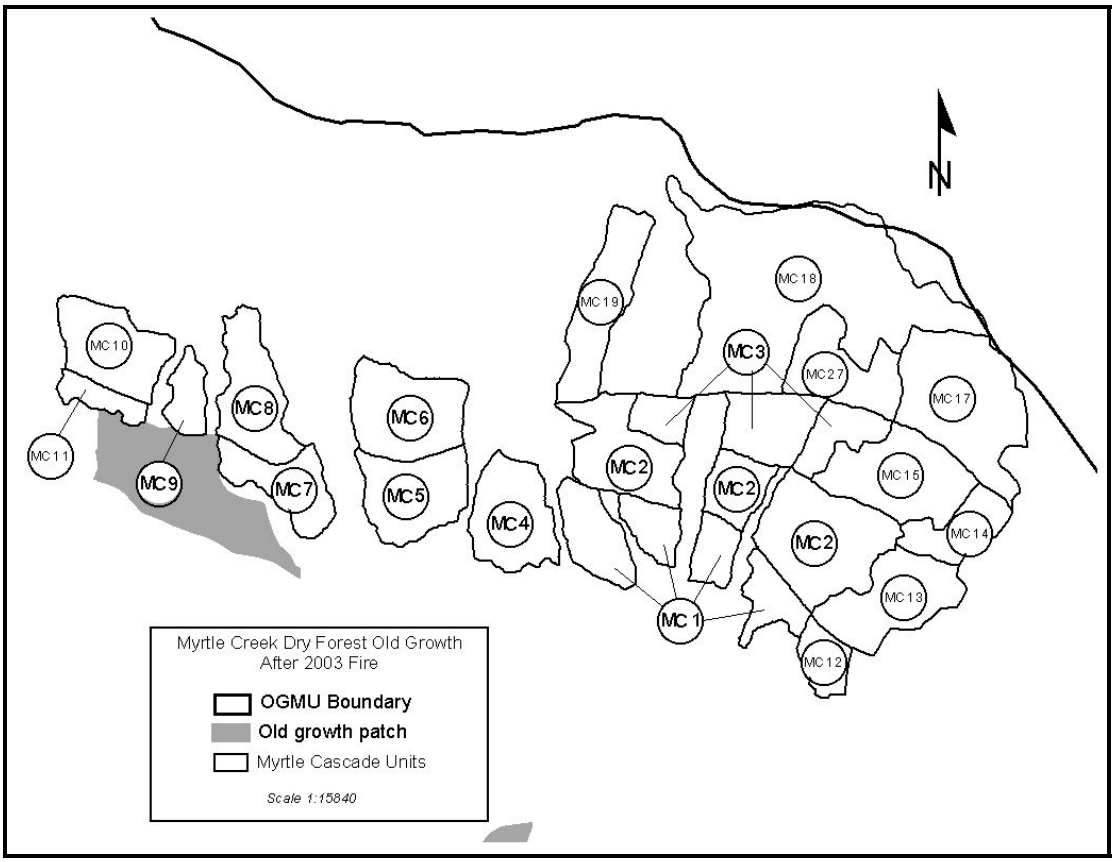
The EIS goes on to state**, "**the smaller merchantable trees had been harvested and removed from the sale area; it also shows the unmerchantable trees that were slashed and left for underburning, which was scheduled to start in the spring of 2004. As specified in the Myrtle-Cascade EIS slash was to be left for at least six months prior to burning, to allow for nutrient leaching; spring burning was specified on dry sites instead of fall burning, in order to minimize potential affects on the municipal watershed. Allowing the slash to cure over the summer and fall allows for nutrients like potassium (which the trees use to protect themselves from insects and diseases) to leach back into the soil profile. Figure 3-10.c shows the same stand after the Myrtle Creek Fire burned in early September 2003. In essence, when the fire entered this unit it was burning in a Fuel Model 12, which is a slash model. Fires in these types of fuels can result in rapidly spreading fires with high intensities capable of generating firebrands. When a fire starts, it is generally sustained until a fuel break or change in fuels is encountered (USFS 1982). Given the heavy fuel loads the fire burned with high severity in this area and most of the residual trees were killed because of the excessive heat from the ground fire, not because the fire climbed into the tree crowns."

"A second series of photographs (Figures 3-10.d through 3-10.f), also taken from a single photo point, shows how the Myrtle Creek Fire behaved in areas where fuels created by timber harvest were much lighter. The stand in Figure 3-10.d was considerably less dense prior to treatment than the stand in Figure 3-10a. Therefore, fewer small diameter trees were removed, both merchantable and unmerchantable, and thus the treatment generated far less activity fuel (Figure 3-10.e). The resulting fire behavior was much less intense and the effects on the soils and residual trees were much less severe (Figure 3-10.f). In essence, this unit was converted to a Fuel Model 8 where fire behavior generally consists of slow-burning ground fires with low flame lengths (USFS 1982)."

"Had the District been able to finish converting the unit in the first series of photos to a Fuel Model 8, the fire effects would have been similar to those pictured in Figure 3-10f, i.e., a low intensity underburn."

Lands Council also makes several references to the prescriptions in the Myrtle-Cascade EIS regarding treatments in mature and old growth forests. It is true that the District treated some stands that were considered over mature (KP04, M02, etc.). However, our Forest Plan does not include standards, or restrictions, for management of mature forests. In terms of dry forest old growth management the Myrtle-Cascade EIS did include treatments in the forest types. The stands that were considered old growth at that time are shown in the following map. As part of the analysis for this project old growth field exams were conducted in stands that were considered old growth prior to the 2003 Myrtle Creek fire to determine how much of the old growth still meets the Green and others (1992, errata corrected 2005) criteria. The field exams of these stands are included in the project file [OG (a)-2]. Figure ** shows the stands that are still part of the Forest's allocation after the fire. As shown in these Figures both old growth stands that were treated and stands that were untreated burned in the fire. As stated earlier, the photos in Chapter 3 of the Myrtle Creek HFRA FEIS are intended to show the progress of the dry site prescriptions conducted under the Myrtle-Cascade EIS. The photos show the fire severity and effects were dependent on extant fuel conditions. Had the treatments been completed prior to the fire the objectives of the prescriptions would have indeed bee met. Some of the units (MC20, MC21, MC22, MC23, MC24) referenced by The Lands Council are not within any OGMUs that are part of the Myrtle Creek HFRA and were, therefore, not included in the cumulative effects analysis for this project. However, MC22 provides a good example of unit where a prescription in dry forest old growth was carried through to completion and not affected by the 2003 Myrtle Creek Fire. A recent field exam was completed in this stand it was determined that the stand meets the minimum criteria for dry site old growth [project file document (OG(b)-20].





Chapter 2 of the Myrtle-Cascade FEIS (Table 2-6, p.2-12 and 2-13) discusses the objectives of prescriptions that were proposed under this project. In summary, the prescriptions were designed to remove the small-diameter Douglas-fir and grand fir that while retaining the large-diameter ponderosa pine and western larch that are providing the old growth character of the treated stand. Based on timber cruise information conducted in these stands the prescriptions implemented as the FEIS intended. A summary of the data collected [(OG (a)-07, 08, 09)] reveals that the residual stand basal areas were about 69 ft2 with 35 TPA averaging nearly 21" DBH. Over 80% of the residual trees were ponderosa pine and western larch. Conversely, in terms of trees harvested nearly 90% were Douglas-fir and grand fir and the average tree harvested was less than 12" DBH prior to the occurrence of the 2003 Myrtle Creek fire.

Issue 4 (OLD GROWTH) (App E - *.pdf - pg 94 of Objections):
Objectors raised the same issue in the DEIS, "The DEIS states In their study of old growth ponderosa pine and Douglas-fir stands on three National Forests in Montana, Arno et al (1995) found that eight out of nine plots had pre-1900 basal areas of less than 145 ft2 and that seven out of nine plots had pre- 1900 basal areas of 100 ft2, or less.

We question the accuracy of the data used to make this estimate. How could the data possibly count basal area from small trees of that era, given that the current on-the-ground evidence of their extent cannot be found? Baker and Ehle, 2001 present theory and empirical results that suggest that fire-history data have uncertainties and biases when used to estimate the population mean fire interval or other parameters of the fire regime.

The DEIS does not acknowledge the limitations of the fire history methodology, nor disclose in sufficient detail just what project-area data it relies upon.

Suggested remedy: *None*

Response: The District responded to this question in detail in the FEIS, Appendix F, p. 18-19 ("Response to Comments"), "Arno and others (1995) includes a detailed discussion regarding the methods of stand reconstruction they employed to determine pre-1900 basal areas. Their entire process is too lengthy to include here, but in summary it includes consideration of the living overstory that established pre-1900, dead trees that are currently standing, and fallen trees. Habeck (1990 and 1993) used similar methods to determine pre-1900 basal areas. Their research publications are included in the project file and they are also are available publicly."

"In the DEIS and FEIS Chapter 3 and 4, we referenced several reliable sources in our discussions of estimated fire return intervals in the project area (Chapter 3 and 4 Fire and Vegetation sections). The numerous sources (project file documents) referenced in the DEIS and FEIS Chapter 3 discuss their methods of reconstructing historical fire intervals and they acknowledge potential sources of error. We point out that many of the sources of error discussed in the comments would actually underestimate mean fire return intervals. We are aware there would be a degree of uncertainty in any method used to estimate historic fire return intervals. However, more important than the precise mean fire return interval is data that suggests fires occurred frequently in the project area. As noted in the DEIS and FEIS Chapter 3, and 4, and discussed in previous responses (comments F-4a), the mere presence of old growth ponderosa pine indicates mean fire return intervals of less than 50 years (Arno and others, 1995). We feel confident that data collected locally correlates very well with data from other areas where fire history has been studied on dry forest types in the Region."

"We agree that creation of low-density forest structure across all parts of ponderosa pine landscapes would be inappropriate; however, given that most fires have been eliminated in these ecosystems for 80 years or more, the majority of these forest types on the District are at the upper limits of their historical densities, as supported by Regional and local scientific data. As the DEIS (p. 4-41) and FEIS Chapter 4 state, 'In the dry forest types, old trees need relatively open conditions to maintain modest growth rates and survive several hundred years. Low-vigor trees are unable to marshal enough resources to maintain adequate defense. Large trees growing in a dense layer of smaller trees are especially vulnerable to attack, underscoring the importance of maintaining reasonable growth rates (Arno and Fiedler 2005).' The DEIS (p. 4-42) and FEIS Chapter 4 further states, 'Absent fire, understory trees out-compete the old trees for moisture and nutrients. The old trees lose vigor and often succumb to insects and disease, or the stress imposed by even low- moderate intensity fires (Arno et al 1995, Biondi 1996).'"

Issue 5 (OLD GROWTH) (App E – *.pdf - pg 94 of Objections)*The IPNF ignores the fact that some types of old growth are maintained by low intensity disturbances (Arno, Smith & Krebs 1997; Habeck 1990; Habeck 1988)." The FS's own studies disclose that mixed severity fires are also key to the development of some old growth types (USDA Forest Service, 1998-1999).*

Suggested remedy: *None*

Response: This was issue was also raised during the DEIS and responses were included in the FEIS, Appendix F, p. 23, "Our entire premise for entering dry forest old growth is based on the fact that these forests were maintained by low-intensity disturbances. Chapter 3 of the DEIS (p. 3-112, FEIS Chapter 3) discloses, 'As stated in Arno et al (1995) and (Biondi 1996), absent fire, understory trees out-compete the old trees for moisture and nutrients the old trees lose vigor and often succumb to insects and disease, or the stress imposed by even low- moderate intensity fires.' Western larch is often a component in these dry forest old growth stands and our target stand objectives include retention of the old growth larch trees, recruitment of the intermediate size trees, and creation of openings favorable for larch regeneration. However, western larch is typically a more significant component of cedar, hemlock, and some subalpine fir habitat types. This type of old growth is part of the more than 7,500 acres of the old growth in upper Myrtle Creek that where no treatments are proposed. Some members of KVRI actually requested that District consider treatments in these forest types, but the District replied that it the Forest does not enter these types of old growth (KVRI meeting notes – November 30, 2004). (See Chapter 2 discussion of the Collaborative Development of Alternatives for more information.)."

F. CLIMATE

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1 (CLIMATE) (p. 3) - *Another significant shortcoming of the FEIS is the lack of discussion of issues related to Global Climate Change (GCC). The notion that long-lived seral species should be favored neglects the impacts, at various scales, of GCC. Research conducted by scientists at the Rocky Mountain Research Station Forestry Sciences Lab in Moscow, ID reveals significant declines in both Larch and Ponderosa Pine in the coming decades1. By favoring these species so heavily, the proposed action fails to account for reasonably foreseeable events that have the very real potential to directly influence the effectiveness of this project.*

Suggested remedy: *None*

Response: GCC is an extremely complex issue as discussed in Rehfeldt and others (2006), "We are led, therefore, toward the conclusion that predicting the composition and distribution of future plant assemblages from contemporary climate profiles in a large and heterogeneous physiographic region may be impossibly complex."

In terms of mitigating the effects of climate change, Rehfeldt and others (2006) note the varying scientific opinions, "While the evolutionary process is demonstrably efficient at responding to a change in climate, the rate of climate change predicted for global warming poses a greater threat to natural populations than the amount of change (Huntley 1991; Rehfeldt et al. 1999, 2002; Etterson and Shaw 2001; Jump and Penuelas 2005). Some (e.g., Noss 2001) advocate letting nature take its course, thereby relying on evolutionary processes to realign species, genotypes, and climate. Others, however, argue that rapid rates of change would create a lag in response so large that natural landscapes would be incapable of maintaining the production of goods and services that humans expect (Davis 1989; Huntley 1991; Rice and Emery 2003; Tchebakova et al. 2005). Mitigating effects of global warming, therefore, would require mankind to proactively participate in evolutionary processes by planting the appropriate genotypes of the appropriate species at the novel location of their climatic optima (Tchebakova et al. 2005)."

Rehfeldt and others (2006) conclude, "Despite the availability of these powerful models, a thorough assessment of the effects of global warming is still distant. Analyses are particularly needed at the level of the landscape rather than continents or regions." As acknowledged in Rehfeldt and others (2006) average global warming predictions from two GCM's suggest temperatures should rise 5 C and precipitation should increase and range from 3.4 C to 6.5 C, whereas precipitation should increase by average of 27% (126 mm), but range from -11% (-38 mm) to 224% (1174mm).

As discussed in Fox (2007), "The prospect of novel climates has people rethinking traditional goals such as maintaining native ecosystems. 'That's probably going to be impossible,' says Nathan Stephenson, a research ecologist at the USGS Western Ecological Research Center in Three Rivers, California. 'But what you can still do, even if you can't maintain native communities, is potentially maintain regional biodiversity and ecosystem functions.'"

Fox (2007) continues, "Land managers would love to predict how ecosystems will reorganize, what sorts of no-analog communities might emerge, and which species will dominate. Ecologists have produced niche models that predict species' future geographic distributions based on climates in their current locations. But that approach may break down when it comes to future no-analog climates, says John Williams. 'You're limited by what you can observe today,' he says. 'It's a real problem for making ecological forecasts for climates that are outside the current range of observation.'"

Our forested landscapes on the IPNF contain a dozen different conifer species and each species has a variety of ecological requirements. Based on our landscape assessments we have identified some consistent trends in our sub-basin assessments across the Forest. As discussed in the FEIS, p. 3-44, "The North Zone Geographic Assessment (NZGA) defines forests in the Myrtle HFRA where treatments are being proposed as "Low Integrity/High Risk Landscapes." These landscapes have changed the most from historic conditions due to major losses of long-lived seral species (ponderosa pine, western larch, and western white pine). Current forests area are dominated by shade-tolerant, and drought- and fire-intolerant species (grand fir, western red cedar, and western hemlock), and short-lived seral species (lodgepole pine and Douglas-fir). The FEIS, p.3-57 through 3-58 further describe this change in species composition. "The shade tolerant species that now dominate the landscape tend to be much less resistant to fire, insects, and disease than the long-live seral species they have replaced."

One of the long-term objectives of our proposed prescriptions is to increase the proportion of long-lived seral species in the project area to increase the diversity, not to eliminate other species such as Douglas-fir, grand fir, cedar, and hemlock. In conclusion, our long-term vegetation strategy is designed to manage for species diversity. This seems to be prudent given the relatively wide variability of future climate change predictions.

Finally, some context is needed that explores the actual acreage the District is likely to affect. For example, about 1.5% of the forested acres on the District currently consist of acreage where ponderosa pine is the dominant species. This is compared to an estimated 9% of these forests that were dominated by ponderosa pine historically. In order to approach this historical percentage the District would need to convert 1,000 acres to ponderosa pine forests *every year for the next 28 years*. As discussed in the Mission Brush SFEIS (p.4-33) the District has been regenerating about 450 acres annually since 1990. This means the District would need to double the acres we are regenerating annually and it would *all* have to be in dry forest types to approach historical ponderosa pine percentages. Given the acreage the District is actually affecting annually with management it does not appear likely that the long-term concern will be *too much conversion to ponderosa pine* dominated forests, but more likely, *not enough*.

G. SOILS

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (SOIL) (Objections page 23)
The FEIS should not eliminate National Forest roads from cumulative effects analysis, regardless of a "designated land" status.

Suggested remedy: *None*

Response: The Regional Soil Quality Standards (SOIL-35) state that the "… standards do not apply to intensively developed sites such as permanent roads….." (FEIS 3-64). Existing classified National Forest System roads are considered designated lands and, as such, the loss of soil productivity due to these roads was not considered in the cumulative effects analysis (FEIS, page 3-65; 4-77).

It is understood that Forest System roads, including cut and fill slopes, are considered lands removed from production administratively and biologically. In addition, the reader is repeatedly directed to the Specialist's Report on Watershed Hydrology for a comprehensive evaluation on cumulative effects of the road system (FEIS 4-80, 84, 86).

On the other hand, analysis of compliance in regard to Forest Plan soil standards (in comparison to R1 Soil Quality Standards) includes system roads within units. Proposed management practices, *including system roads*, for Alternatives 2 and 5 are below the 20 percent impact limit, therefore meeting Forest Plan standards except for Unit G3 (FEIS 4-86; SOIL-18, 19). Hence, Unit G3 is scheduled for soil improvement through decompaction of skid trails (FEIS 4-80; 2-26).

Issue 2. (SOIL) (Objectors page 23)

Although the FEIS states that no grazing is occurring within the proposed project units, the FEIS fails to address past and current grazing across all land ownerships of the project area. The FEIS fails to include grazing information on state owned and privately owned lands within the analysis area, or any information on past grazing that occurred on National Forest land.

Suggested remedy: *None*

Response: The FEIS states that "[t]here are no rangelands or grazing permits on National Forest System lands within the project area. Lands administered by the Forest Service within the project area do not include prime range lands or farm lands" (FEIS 4-102). No management induced grazing has occurred within the project area, which eliminates the need for a detailed analysis for grazing.

Issue 3. (SOIL) (Objections page 24)
The soils analysis within the FEIS is inadequate and inaccurate.

Suggested remedy: *None*

Response: The soils analysis for the Myrtle Creek HFRA project meets the intent of the National Forest Management Act by meeting IPNF Forest Plan and R1 Soil Quality Standards (SQS) and contains a thorough, appropriate, and meaningful evaluation of the soil resource.

The analysis area for soils and SQS is the individual unit, also called activity area (FEIS 4-76; R1 – SQS: PF Doc. SOIL-R-35). The activity area is considered an appropriate geographic unit for assessing soil environmental effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area.

The soils analysis in the FEIS therefore focused on a thorough review of existing conditions (3-64 through 3-72) also incorporating regulatory framework (3-64), methodology (including limitations in analysis methods (3-65, 66)), and affected environment (3-66 to 68). Existing conditions were discussed in detail and disclosed acres and locations for landtype and

hazard ratings (3-68 to 69), soils and productivity (3-69 to 70), wildfire and severely burned soils (3-70), and site conditions (3-70 to 72) summarized in Table 3.20, which itemizes and displays unit-by-unit existing conditions as well as potential impacts.
Past, proposed, and reasonably foreseeable activities and their impacts in regards to soils are stated on FEIS page 4-83 through 85. The Environmental Consequences section in the FEIS (page 4-76 though 87) discusses potential future impacts from the proposed Myrtle HFRA activities by addressing direct, indirect, and cumulative effects on soils from vegetation treatments (4-79, 83, 84), roads (4-80, 83, 85, 86), landings (4-80), mitigation measures (4-80), soil productivity (4-81), coarse woody debris and organic matter (4-81, 86), prescribed burning and slash disposal (4-82, 85, 86), reforestation (4-82), noxious weed control (4-82, 85), wildfires (4-84), slope stability (4-85), and gathering of forest products (4-85).

Cumulative effects to soils need to overlap in time and space and so are not expected outside the proposed units (see pages 4-82 through 4-86 of the FEIS). However, one exception recognizes the potential for slope instability concerns (FEIS 4-85 to 86), which are therefore included in the cumulative effects analysis.

The expected impacts in the area from the proposed project Alternative 2 are incorporated into Table 3.20 (page 3-72) and show that approximately 151 acres of soils are expected to be disturbed from harvest and temporary road re-construction. Alternative 5 (PF Doc. SOIL-8) is estimated to impact approximately 87 acres of soil. These estimates are further discussed and put into context on page 4-79 as well as in Table 2.16 on page 2-42.

Finally, "Features Designed to Protect Soils and Soil Productivity" (FEIS 2-26 through 28) outlines practices that are designed to minimize the detrimental impacts of soil compaction, displacement, severe burning, and nutrient and organic matter depletion on long-term soil productivity. The use of these practices would insure that the soil quality standards listed in the Forest Plan and Regional Soil Quality Standards are met.

Issue 4. (SOIL) (Objections page 24 - 26)

The refusal of the IPNF to carry out its duty to perform cumulative impacts analyses for soils beyond the boundaries of proposed vegetation treatment units is major source of our soil productivity objections.

p. 24 The IPNF limited cumulative impact analysis for soils to the cumulative impact of past and proposed logging within the boundaries of proposed vegetation treatment units, without regard to conditions outside of the proposed cutting units.

p. 25 With such heavy damage evident in the Myrtle HFRA Project proposed units that were logged in the past, it makes absolutely no sense that the IPNF failed to survey existing damage in other past units in the project area, for disclosure in the FEIS.

p. 25 Without a broader view of the cumulative impacts from such repeated entries, this kind of mismanagement of public lands is simply not consistent with NFMA or NEPA.

p. 25 The Ninth Circuit addressed a very analogous situation in Lands Council v. Powell, where the IPNF proposed more logging in a watershed that was no longer properly functioning because of the effects of past logging. As the Court noted in that case, "[c]umulative effects analysis requires the [FEIS] to analyze the impact of a proposed project in light of that project's interaction with the effects of past, current, and reasonably foreseeable projects… [Here] there is no discussion of the connection between individual harvests and the prior environmental harms from those harvests that the Forest Service now acknowledges." Ibid., at 1027. By analogy, the same failure of analysis is evident for soils in the FEIS for this Myrtle HFRA Project.

p. 26 Again, Objectors note that the FEIS only provides analyses or mitigation measures for proposed Myrtle HFRA Project vegetation units, and provides absolutely no disclosures or analysis for these types of soil conditions in other past "managed" areas in the project area that experienced impacts related to reductions in organic matter and alterations in soil nutrients.

Suggested remedy: *None*

Response: Regional direction states that the analysis area for soils and Soil Quality Standards (SQSs) is the individual unit, also called activity area (FEIS 4-76; R1 – SQS: PF Doc. SOIL-R-35). The activity area is considered an appropriate geographic unit for assessing soil environmental effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area. Cumulative effects to soils need to overlap in time and space and so are not expected outside the proposed units (see pages 4-82 through 4-86 of the FEIS). However, one exception recognizes the

potential for slope instability concerns (FEIS 4-85) which were therefore included on pages 4-85 and 86 in the cumulative effects analysis and state:

> "Proposed harvest activities can increase the potential for slope instability from increased soil water content, reduced and decomposing root mass, and decreased canopy cover, when added to already existing past harvest activities within the same vicinity (Megahan et al. 1978; Gray and Megahan 1981). There is a potential for cumulative effects on approximately 271 acres in proposed Units E3, E8, and F1 that are located east of the Curve Creek timber sale (1990), and the more recent (2004) Salt Lick timber sale (see Map Appendix). However, stable slopes are less than 35 percent and harvest treatments were intermediate so that remnant trees and upcoming regeneration should provide little cause for concern.
>
> Slope stability could be also affected on site, and downslope from proposed Units D1 and D2, as soil water may increase as a result of logging and the cumulative effects from a winding system road and past regeneration harvest (mid 1980s) surrounding the immediate area. Dense reforestation on the productive surrounding slopes, however, reduces instability potentials.
>
> The remaining past harvest activities in the proposed project area that are not spatially associated with any of the proposed harvest units (i.e. downslope or upslope) were identified as stable or not relevant to having a cumulative effect".

The task of selecting the geographical boundaries involves several factors, including the scope of the project considered and the features of the land. If one acre of land receives soil impacts and a second management activity is planned for that same site, then soil cumulative effects are possible (FEIS 4-83). "However, evaluation of cumulative effects to soil productivity does <u>not</u> require an integrated "watershed-type" assessment since that is not considered an appropriate geographic area. This is because assessment of soil quality within too large an area can mask or "dilute" site specific effects" (FEIS 4-83).

For example, the Bitterroot National Forest conducted a watershed scale analysis to help evaluate overall watershed condition related to soil and water processes at the 7th level sub-watershed for their recent Middle East Fork HFRA Project proposal. Their findings, based on field review, revealed that "…the GIS analysis did not give us information we could correlate to either site-specific detrimental soil disturbance or stream channel condition. Though the analysis did provide information as to the location of disturbance on the landscape, this disturbance could not be linked to detrimental disturbance and the Regional SQS. This site-specific link is not possible because of the variability in soil texture, the amount of organic matter and ground cover, soil response to past projects, and the intensity of the past project" (PF Doc. SOIL-43).

On the other hand, at the unit scale, activities that cause soil impacts may have cumulative effects – i.e. soil porosity, water holding capacity, aeration, long-term productivity etc. – with repeated entries (FEIS 4-83). It should be noted that unit-specific soil condition surveys were conducted during the summers of 2005 and 2006 (PF Doc. SOIL-1, 2). In addition, 26 small soil pits were dug in the Myrtle and Snow Creek watersheds during the initial on-site evaluation period (see Soils Map 3 for locations; PF Doc.SOIL-22, 23, 25, 26, 27, 28, 29, 31 for findings and further details).

It is this unit-specific information that is evaluated against the Regional SQS (FEIS Table 3.20; page 3-72; PF Doc. SOIL-1, 2). Cumulative effects for both Alternatives were disclosed with an itemized list of proposed harvest units and their overlap with past activities (by timbersale name and year) on page 4-85 and 86 and their resulting impacts (as disclosed in FEIS Table 3.20, page 3-72 and with complete details in PF Doc. SOIL-1; as well as Table 3-15 on page 3-52 and Map Section 7 – past harvest table and map), therefore providing a connection between individual past harvests and the prior cumulative environmental harms from those harvests that the Forest Service acknowledges.

As found on FEIS page 4-86 and 87, the Myrtle Creek HFRA project fulfills the intent of the National Forest Management Act by meeting IPNF Forest Plan and R1 SQS. Soil resources are being protected through unit-specific mitigations and BMP implementation.

Furthermore, as illustrated in the FEIS Watershed section on page 4-27 (Table 4.16) and 38 (Table 4.25), there was little correlation between high levels of management related disturbance at the sub-watershed scale and stream channel condition.

Issue 5. (SOIL) (Objections page 27)

And the FEIS indirectly acknowledges that the Myrtle Creek Fire of 2003, which burned through areas of untreated slash following Myrtle-Cascade EIS/ROD logging activities:

…dead and down fuel loads could contribute to an increased potential for locally severe fire effects on soil. Deteriorating effects usually include loss of organics and nutrients, and a reduction of water infiltration (Wells et al. 1979, p. 26). High intensity burns that create high soil surface temperatures, particularly when soil moisture content is low, may result in a complete loss of soil microbial populations, woody debris, and the protective duff and litter layer over mineral soil (Hungerford 1991; Neary et al. 2005). Since erosion increases following a fire are often directly proportional to fire intensity (Megahan 1990, p. 146), the removal of ash-capped surface soils could reduce soil productivity. (FEIS 4-78.)

Suggested remedy: *None*

Response: This objection is out of context and needs to be clarified. The citation from the FEIS, page 78, was taken from the section "**Direct and Indirect Effects of Wildfire**" and states that "The continued accumulation of dead and down fuel loads…..[continue as cited above]". The paragraph does **not** refer to burned areas of untreated slash following the Myrtle-Cascade EIS/ROD logging activities but to the deviation of natural fire regimes and excessive accumulation of biomass as a result of fire suppression during the last century anywhere in northern Idaho today (Smith and Fisher 1997).

Issue 6. (SOIL) ***(Objections page 27)***

The FEIS failed to disclose the specific cumulative effects via detrimental soil burning disturbance caused by the Myrtle Creek Fire of 2003 that burned approximately 3450 acres of the project area (FEIS 4-84).

Suggested remedy: *None*

Response: As stated in the FEIS (4-84), the watershed is still recovering from the fire and post-fire impacts with the greatest impacts usually occurring during the first one to two years after the fire. On page 3-70, the FEIS discloses additional information on the duration of post-fire effects to the water supply and discusses a debris torrent in the Yellow Pine drainage that occurred after a summer storm in 2004 that was related to post-fire effects in the uplands. PF Doc. SOIL-24 and 27 include findings from fire rehab monitoring and the evaluation of the upland area above Yellow Pine. The BAER (Burned Area Emergency Response) report (SOIL-R-36) gives a detailed evaluation of the post-fire findings and projected effects which state "[e]rosion rates (soil loss) are considered within the natural range of variability and not a risk to long-term soil productivity. Sedimentation rates will impact water quality and will affect the water supply and water treatment costs." SOIL-37 displays a map of the burn severities within the Myrtle Creek fire perimeter.

Issue 7. (SOIL) ***(Objections page 27)***

Yet the Myrtle HFRA Project FEIS completely belies the promises made in the Forest Plan, by donning blinders as to the amount of soil productivity damage the project area watersheds have sustained as a result of Forest Service management. How can the public be assured that these watersheds have been managed in accordance with principles of sustained yield, if the agency never bothers to monitor the cumulative reductions in soil productivity—therefore potential losses of timber yield over future rotations—that are absolutely vital to the re-growth of the forest following logging?

Suggested remedy: *None*

Response: Past monitoring reports from 2000 to 2004 are currently available online on the IPNF web site at http://www.fs.fed.us/ipnf/eco/manage/forestplan/index.html#fpmon and for 2005 and 2006 in the near future. The same reports plus those for the years of 1998 and 1999 are also enclosed in the Myrtle Creek HFRA reference section. All include annual Forest Plan soil monitoring for various trends from numerous grazing, timber, fire, and rehab projects.

Issue 8. (SOIL) ***(Objections page 27-28)***

A) Objectors also have concerns about the methodology the IPNF utilized to assess soil damage in proposed vegetation treatment units. First, at p. 3-66, the FEIS discloses that only indirect assessment determined which units were assumed to have been previously impacted: "Soil resource existing conditions were determined using TSMRS records, aerial photography, and GIS data." The FEIS doesn't provide any disclosure of how accurate those methods might be, in other words how likely these methods might miss previously logged areas. Since "…regulated timber harvest started on Forest Service land in the project area in the 1950s" (FEIS 4-83) and we know the TSMRS records don't go back far and aerial photography is less telling of decades-old logging, it is highly likely the IPNFs first level of screening failed to a significant extent.

B) As Objectors DEIS comments stated, we cannot discern if those methods were scientifically adequate for accurately determining amounts of detrimental disturbance from past logging. Nor can we tell if use of the "disturbance spreadsheet (DS)" (p. 3-66.) was adequately validated by the soil surveys taken in the project area. (Objections page 28)

Suggested remedy: *None*

Response: A) The FEIS and project file clearly reflects that every proposed unit was visited and field-verified for past disturbances on-the-ground (PF Doc. SOIL-1, 2, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33; FEIS 3-66, 70). TSMRS, aerial photography, and GIS are tools that are used for pre-work, to gather information, to narrow down or focus on specific areas of concern, or simply to identify areas where more information needs to be gathered in the field. Aerial photography records are available starting in the 1930s and are obtainable for each decade into the next century. Digital aerial imagery and programs, such as Google Earth, provide more recent images that offer excellent visual tools that can enhance and complement field evaluations to disclose disturbances from a birds-eye view that may otherwise go unnoticed while walking the ground.

B) The disturbance spreadsheet (DS) evaluates the impacts of proposed activities on harvest units for each harvest method based on empirically derived coefficients that were obtained and averaged from numerous monitored sites throughout the Forest (FEIS 3-66; PF Doc. SOIL-9, 10). It is simply a quick tool to estimate proposed harvest effects and does not require a validation of soils within the survey area. It does not account for existing conditions (FEIS 3-66). Existing conditions, including soil limitations, are considered separately (PF Doc. SOIL-8, 41; FEIS 3-68, 69, 70, 71, 72) and do not include use of the DS.

Issue 9. (SOIL) ***(Objections page 28)***

What Objectors said in effect that, the IPNF gives itself a free pass to gerrymander proposed Myrtle HFRA Project veg. treatment units so that it may dilute areas that had soils damaged over more than 15% of the activity area in the past by adding them to previously unlogged areas.

Suggested remedy: *None*

Response: The FEIS (3-71) and DEIS (A-21 Table A-5) disclose that three units (D1, G2, and G7S) have localized elevated levels of detrimental disturbance in portions of the activity area due to previous harvest activities. The three activity areas, D1 (Alt 2 only), G2, and G7S were tractor logged in isolated portions of the units but are otherwise untouched. Although there are localized areas that are impacted, these units do not exceed the soil quality standards (FEIS 4-85; 3-72 Table 3.20; PF Doc. SOIL-7).

The proposed treatment for all three units consists of skyline (D1 and G7S) and helicopter (G2) logging which will add little to no additional disturbance to the units due to the aerial logging type (Niehoff 2002). A field trip in November of 2005 (PF Doc. SOIL-31) reviewed improvement opportunities to previously disturbed soils in several activity areas, including units D1, G2, and G7S. Given that the logging system was switched for the proposed sale and that vegetation and recovery are on their way on these old skid trails, the Forest Soil Scientist's professional judgment concluded that further disturbance would likely not be beneficial for the soils of these units. (Also see Issue 13).

In general, it is the activity area, or unit, that is evaluated for past soil disturbance and usually consists of several similar stands and fuel types for which the forester and silviculturist design prescriptions. It is therefore not out of the ordinary that portions of these units may have received previous soil disturbance. After all, this is why activity areas are monitored on-site previous to proposed harvest activities to determine if, where, and how much disturbance is present within the activity area as a whole. The isolated disturbance findings do not have to be disclosed separately though they were included in the DEIS (A-21 Table A-5) since the main result is the overall state of the activity as a whole, not just portions of it (PF Doc. SOIL-35). The disclosure was an attempt to portray an honest picture of the existing condition so that accusations of "gerrymandering" could be avoided.

Issue 10. (SOIL) ***(Objections page 28-29)***

It is important to point out, however, that in the following comment, Dr. Powers is referring to separate and distinct thresholds when he talks about 15% increases in bulk density, which is a threshold of when soil compaction is considered to be detectable, and 15% areal limit for detrimental disturbance, which is the SQS threshold for how much of an activity area can be detrimentally disturbed (including compaction from temporary roads and heavy equipment, erosion resulting from increased runoff, puddling, displacement from skid trails, rutting, etc.). With that caveat, what Dr. Powers has to say in relation to the R1-SQS is quite revealing as quoted in Nesser, 2002:

[T]he 15% standard for increases in bulk density originated as the point at which we could reliably measure significant changes, considering natural variability in bulk density… [A]pplying the 15% areal limit for detrimental damage is not correct... [T]hat was never the intent of the 15% limit… and NFMA does not say that we can create up to 15% detrimental conditions, it says basically that we cannot create significant or permanent impairment, period... (emphasis added).

Suggested remedy: *None*

Response: Bob Power's quote in Nesser (2002) should be cited as whole and not leave out additional statements. It reads: "[T]he 15% standard for increases in bulk density originated as the point at which we could reliably measure significant changes, considering natural variability in bulk density. **It may or may not mean that a 15% increase in BD is detrimental. That may depend on the soil and ecosystem in which it is found.** [A]pplying the 15% areal limit for detrimental damage is not correct. [T]hat was never the intent of the 15% limit (see previous note) and NFMA does not say that we can create up to 15% detrimental conditions, it says basically that we cannot create significant or permanent impairment, period. [H]ow that works out in terms of practicality is the problem.**[I]t may be more appropriate to look at the overall effect of an impact on an area.[F]or example, displacement of several small patches of ground may not be significant to overall productivity on a site whereas displacement of one or two large areas may be significant. [A] study by Powers and Miles showed no detrimental effects from skid trails on a site even though they occupied a significant area on the site.** (emphasis added)
It is recognized that ground disturbing activities can have impacts on the soil resource (FEIS 3-72; 4-76 to 87; SOIL-8, 9, 10, 18); the key is to minimize the impact before they occur (FEIS 2-26 to 28 – Features Designed to protect Soil and Site productivity; FEIS 3-71). The Soil Quality Standards (SQS) were developed based on the best available science (Powers 1990). The 15 percent SQS is only part of what the Forest looks for in evaluating NFMA and soil and site productivity, they also look at the vegetation and hydrology of the site to ensure that it is functioning to capture, store, and safely release water and erosional materials (SOIL-1 to 6, 11, 14, 17, 22 to 32).

The FEIS, page 3-64, addresses consistency with National Forest Management Act (NFMA). In summary, the National Forest Management Act requires the Forest Service to insure that timber will be harvested only where soil will not be irreversibly damaged (16 USC Section 1604 (g)(3)(E)(i)) and even-aged regeneration harvest be carried out in a manner consistent with the protection of soil (16 USC Section 1604 (g)(3)(F)(v)). Nothing in the proposed activities for either Alternative 2 or 5 will result in irreversible effects on the soil resource (FEIS 4-101; 4-80).

Issue 11. (SOIL) ***(Objections page 29)***
FEIS Table 3.20 is confusing, failing to indicate how existing percentage of detrimental disturbance plus predicted Project detrimental disturbance leads to the expected percentage of detrimental disturbance per unit.

Suggested remedy: *None*

Response: The FEIS page 3-71 and 3-72 states that the level of disturbance increase depends on the amount or lack of existing skid trails. It is presumed that activity units that have had little or no prior disturbance will show a greater incremental increase in potential detrimental disturbance than those units that already contain a network of existing skid trails. Little to no increase in disturbance is therefore expected because equipment would re-use already existing networks of skid trails and landings. Additionally, all ground-based units will be winter logged for further resource protection.
It is true, a precise calculation of additional detrimental disturbance is difficult to predict since variable factors such as operator skills, climate, natural events, and more are not easily foreseeable; however, a reasoned estimate of risk has been provided in the summary of each soil disturbance harvest technique – summer ground-based, winter ground-based, skyline, and helicopter (FEIS 4-77). These empirically derived disturbance coefficients were obtained and averaged from numerous monitored sites throughout the Forest (Niehoff 2002). This project meets the National Forest Management Act (NFMA) and maintains soil productivity. Post-harvest monitoring is also scheduled to assess if mitigation objectives in these units are met (FEIS 2-34; 4-80).

Issue 12. (SOIL) ***(Objections page 29)***

The FEIS provides no cites to assure such mitigations [winter logging, slash mats etc.] will actually result in this zero additional detrimental disturbance.

Suggested remedy: *None*

Response: The FEIS on page 2-26 states that past Forest Plan monitoring reports and literature (USDA FS 2001a, 2002, and 2003; Flatten 2003; Philipek 1985) indicate little to no detrimental soil compaction and displacement with winter logging. Page 2-27 in the FEIS discloses that Forest Plan monitoring and research (Han 2006; Niehoff 2002; USDA FS 2001a, 2002 and 2003) indicates little to no soil disturbance if equipment is operated on a slash mat. (USDA FS IPNF 2005-2006 Monitoring Report – in progress).

Issue 13. (SOIL) ***(Objections page 30)***
The FEIS's discussions of the need for and benefits of its soil restoration and mitigation leads us to regress to an earlier argument: if soil quality restoration is relevant for proposed logged units, why not for all the other units in the project area damaged by past management? Clearly, the IPNF wants us to accept a management regime that features soil restoration in detrimentally disturbed units only when there's another timber sale!

Suggested remedy: *None*

Response: One of the main questions that should always be asked is whether any decompaction or soil improvement efforts would really be beneficial for a given disturbed area or if it would actually do more harm than good. Many of the old skid trails identified during field visits (SOIL-30, 31 and from general observations and experience) were found to have good native grass, shrub, and tree cover. Moving equipment into these sites would negate the vegetation and hydrologic recovery that is already occurring, especially if aerial logging (skyline or helicopter) is proposed. It is the Forest Soil Scientists professional opinion that if a recovery trend is evident, placing ground-disturbing equipment into units proposed for aerial logging that will receive no further ground disturbance would likely not be beneficial for many of the soils in the Myrtle Creek Project Area.

As for other locations in the Myrtle Creek Project Area, habitat type and aspect often differ, especially on the moister north-facing slopes that contain deeper ash-cap soils. Thick cedar/hemlock growth often adds to excessive root content in these soils which might make ripping more difficult or, at a minimum, more damaging to the remaining trees, especially during intermediate harvest (thinning). In addition, soil displacement that excessively mixes or removes the volcanic ash surface layer and reduces soil moisture holding capacity and associated productivity can essentially be irreversible (FEIS 4-80, 83). Consequently, any soil improvement efforts should be carefully weighted instead of just being blindly applied without additional consideration of its potential negative effects.

As stated in the FEIS, page 2-26, it is acknowledged that the effects of restoration are variable depending on the technique and skill at implementation. Although rehabilitation through decompaction and/or re-contouring cannot assume complete reversal to natural conditions, efforts initiate a long-term recovery process. Provisions for net improvement on previously impacted activity areas can be accomplished through soil restoration activities such as decompaction, addition of organic material, revegetation of bare areas, and weed control (FEIS 2-26, 4-77, 80, 86, 87). Anticipated results provide for improvements in hydrologic function and initiate a recovery process that otherwise may be prolonged as soil compaction persists (PF Doc. SOIL-18, 34, and 42).

Issue 14. (SOIL) ***(Objections page 31)***

Another significant factor commonly associated with logging and grazing practices that adversely impacts soil productivity, but is not accounted for in the SQS or the FEIS, is the introduction of invasive weeds into the disturbed area, which weeds often rob the soil of natural moisture and nutrient levels by competing with, and often crowding out, native vegetation…….Objectors comments on the DEIS pointed out that the IPNF needs to account for soil productivity losses associated with the noxious weeds its management tends to propagate, however the IPNF responded only to the general notion that we might be concerned about noxious weed spreading.

Suggested remedy: *None*

Response: Weeds were addressed in several parts of the FEIS. Page 3-67 states that bare or disturbed soils may increase the presence of noxious weeds that can alter vegetative cover and soil stability and effectively reduce native plant species without providing comparable effective soil cover. This can lead to an increase in potential soil erosion, decrease in organic matter input into to the soil, and reduction in potential soil productivity. FEIS page 4-78 and 79 also states that the introduction of weeds and unwanted flora following a fire could lead to higher competition between less desirable plants and native vegetation, especially under the No Action Alternative. Also, the risk of weed spread and the predicted effectiveness of the mitigations in preventing weed spread were analyzed in regards to soils in the FEIS on pages 2-26, 2-43, 3-67, 4-82, and 4-85 as well as in a separate write-up by the weeds specialist and others (see errata sheet and 2-23, 2-34, 4-9, 4-33, 4-101, and 4-

102). In summary, the FEIS analysis discloses the risk of weed spread on soils from harvest and burning activities, as well as the risk of spread from no activities.

Issue 15. (SOIL) ***(Objections page 31)***

The FEIS's methodology fails to analyze and disclose all the cumulative effects implications as we discuss above, from the totality of management in the project area:

> *There is approximately 4,860 acres of industrial private timber land in the upper portion of Myrtle Creek and parts of Snow Creek drainage. Though timber harvest prior to the 1950s was very limited in scale, logging activities have been ongoing and past harvest activities have occurred on approximately 8000 acres of private and Federal land within the project area. How much of these acres are detrimentally impacted can only be estimated, especially since a large portion of the affected land is private. Effects on soil productivity from these activities are site specific attributes of the land on which they occur. (P. 4-83, emphasis added.)*

Even if these impacts can "only be estimated," it's clear that the FEIS fails to provide any such estimates.
Our DEIS comments cited Booth, 1991 as instructive as to the implications and mechanisms of disturbed hydrology, particularly in the context of the aggregate of total cumulatively compacted soils within a given watershed. Our DEIS comments also cited Booth and Jackson (1997), whose research strongly suggests that there ought to be analysis of the total amount of impervious soils or compaction in a watershed.

Suggested remedy: *None*

Response: Please refer to Issue #4 for a previous discussion about cumulative effects and the soils analysis. As a whole, the cumulative effects analysis makes adequate reference to past, present, and reasonably foreseeable activities and furthermore itemizes potential cumulative effects for all Alternatives, especially Alternatives 2 and 5. The analysis (FEIS 4-82 through 86) clearly complies with National Environmental Policy Act (NEPA) and represents a hard look at the soil resource data and information.

Once again, detrimental soil damage is defined in the Forest Service manual direction. There also is a productivity difference between soil disturbance and detrimental damage. Detrimental damage equates to site impairment; the natural community cannot grow or is not sustainable. Size and extent of the disturbance is an important consideration here. For example, small areas of compaction may not impair root development and plant growth while large areas of deep or dense compaction may result in conversion of a site to annual species. Soil disturbance acknowledges that humans have changed the site (compaction, displacement, burning, reduced organic matter, etc.) and affected the soil but that the natural community and soil processes are still in place and are sustainable. Therefore, an estimation of past effects on soils, especially since they are site specific attributes of the land on which they occur, is subjective because of changes in soil type, initial variability of impacts, and recovery of soils over time. This holds true especially for the close to 5000 acres of private checkerboard land in the Myrtle Creek watershed for which little to no information is available. The objectors are therefore correct, no estimate was provided because it would be meaningless since the disturbance cannot be linked to detrimental disturbance and the Regional SQSs.

The Objectors cite Booth (1991) and Booth and Jackson (1997), both well written documents. However, both citations are unrelated to this project because they address watershed function in urbanized aquatic systems (i.e. King County, WA – Seattle area) such as the building of paved roads, houses, and overall urban development. The Myrtle Creek HFRA project does not propose the building of subdivisions!

Issue 16. (SOIL) (Objections page 31)

The FEIS acknowledges that soil conditions affect the overall hydrology of a watershed: Alteration of soil physical properties can result in loss of soil capacity to sustain native plant communities and reductions in storage and transmission of soil moisture that may affect water yield and stream sediment regimes. (P. 4-76, emphasis added.)

Suggested remedy: *None*

Response: Correct, this citation from FEIS page 4-76 provides a brief synopsis of what alterations to soil physical properties (among others, such as biological and chemical properties) can result in when impacted by **management activities or natural events** (emphasis added). Management activities can result in compaction and a reduction in infiltration as stated on FEIS page 3-70 "[s]oil compaction reduces the supply of air, water, and nutrients to plants". In general, these impacts are fairly site

specific and local since the landscape and impacts can vary over short distances. Greater concerns for a larger scale loss of infiltration may be derived from underlying naturally compacted tills as disclosed on FEIS page 3-66 "[a] restrictive layer of dense till often occurs at a depth of 12 to 60 inches and may inhibit infiltration or water movement, especially on the north facing slopes above Myrtle Creek".

In contrast, the opposite often occurs and soil water can be increased from management activities, such as removal of forest canopy, which can result in reduced interception and transpiration, root decay, increased snow accumulations, and altered melting rates (FEIS 3-69). The resulting trend can be either adverse, such as increased landslide potential in extreme cases (FEIS 3-69; 4-84, 85), or favorable, such as raised soil water content to remaining vegetation. Improvements to infiltration rates can also be achieved from the decompaction of roads (FEIS 4-77, 85) and skid trails (4-80, 86, 87).

The Watershed Section in the FEIS (3-1 through 28 and 4-1 through 41; incl. any appendices and supporting modeling as mentioned within the sections) provides for a detailed evaluation that focuses of water yield and stream sediments. For a good summary, refer to Table 2.12 on pages 2-36 to 38, and the statement on page 3-3 which discloses that "[a]lthough past timber harvests and wildfires have affected water yield and timing of flows in portions of the watershed, these changes are not making enough difference to be measured at the City's municipal water intake facility".

In addition, impacts to a far greater aerial extent can occur when soils are severely burned and become hydrophobic. Such water repellant soils are often the result of wildfires (FEIS 4-78) that are fueled in areas of extensive natural vegetation accumulation from prolonged fire suppression and unnatural fire regimes (FEIS 3-70).

Issue 17. (SOIL) (Objections page 32)

Nothing in the FEIS's watershed analysis section specifically addresses the hydrological implications of the soil damage caused by cumulative past management nor Myrtle HFRA project-induced damage.

Suggested remedy: None

Response: Several aspects of hydrological implications regarding soil impacts from cumulative past management and impacts from all three proposed alternatives were addressed. First is slope stability. Chapter 2 Section 2.9-B.2 (k) "Features Designed to Protect Soil and Site Productivity" on page 2-28 states that, among other requirements, live trees and root structure on the slope above Road 633 are retained to ***continue soil water uptake*** and to stabilize soils (emphasis added). FEIS 4-84 also points out that, since changes in soil water content are associated with proposed fuel reduction activities, the existing and future trend could have an effect on potential slope stability.

The discussion on slope stability continues to evaluate cumulative effects from land surrounding proposed activity areas on FEIS 4-84, stating that "changes in ***soil water content*** [that] are associated with proposed fuel reduction activities…" could have an effect on potential slope stability (emphasis added). FEIS 4-85 and 86 also state that "[p]roposed harvest activities can increase the potential for slope instability from ***increased soil water content***, reduced and decomposing root mass, and decreased canopy cover, when added to already existing past harvest activities within the same vicinity"…."on approximately 271 acres in proposed units…". (emphasis added). "Slope stability could also be affected on site, and downslope from proposed Units D1 and D2, as ***soil water may increase*** as a result of logging and the cumulative effects from a winding system road and past regeneration harvest (mid 1980s) surrounding the immediate area" (emphasis added).

FEIS Chapter 3 page 3-69 continues the discussion in regards to the removal of forest canopy and cover from either clearcutting or wildland fire and potential increases in landslide occurrence. These are primarily due to root decay, soil disturbance, increased snow accumulation and altered melting rates, and ***soil water increases*** from reduced interception and transpiration (emphasis added). FEIS 3-70 also provides a list of conditions and indicators of considered detrimental disturbance such as compaction, which can reduce "…the supply of air, ***water***, and nutrients to plants" (emphasis added).

Second, FEIS Chapter 4-77 discusses that "[c]ompaction, displacement, rutting, and severe burning from management activities can have effects on soil physical, chemical, and biological properties". Each property is discussed in further detail on FEIS 4-76 and, for example, states under soil physical properties that its "[a]lteration…can result in loss of soil capacity to sustain native plant communities and reductions in storage and transmission of soil moisture that may affect ***water yield and stream sediment regimes***" (emphasis added). Planting would be done by hand crews and access would occur from existing system roads. This activity would reduce the amount of time needed to recover vegetation, ***hydrologic function***, and soil productivity after regeneration harvesting.

Third, fire can alter soil water processes. "Localized areas of soil sterilization, ***reduced water infiltration***, and lost ground cover can occur below burn piles" (FEIS 4-79; 4-82; 2-8; 2-42) (emphasis added). However, it is also important to note that the lack of land management and the build-up of fuels from a no-action approach can result in soil impacts, such as reduced water infiltration in hydrophobic (water repellant) soils from high severity fires (FEIS 4-78) that may occur because of the increased amount of biomass that has accumulated over decades of fire suppression.

The last item to be addressed is roads. Not all activities proposed by the Myrtle HFRA project have negative impacts. Road decompaction, addition of organic material, revegetation of bare areas, and weed control would provide for improvements in ***hydrologic function*** and would initiate a recovery process that otherwise may be prolonged as soil compaction persists (FEIS 4-80) (emphasis added). Road decommissioning and soil restoration would contribute to a reduction in compaction, thus "…***improving infiltration and reducing surface runoff***" (FEIS 4-85) (emphasis added). Additional discussion on hydrological function in relation to soils can be found in the Watershed/Hydrology/Aquatics analysis section (FEIS 3-23; 4-3, 10, 11, 19, 27) which was repeatedly cited throughout the soil report (FEIS 3-65, 69; 4-78, 79, 83). Positive effects can also be expected from post-harvest tree planting that would "reduce the amount of time needed to recover vegetation, ***hydrologic function***, and soil productivity after regeneration harvesting" (FEIS 4-82) (emphasis added).

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 18. (SOIL) ***(Objections page 13)***

With regards to logging in areas of high potential for sediment delivery, the FEIS and maps are unclear. The FEIS Soils Maps 1 and 2 indicate that logging units will overlap with areas of high sediment delivery potential and high mass failure risk. The FEIS then states (FEIS, 3-68) that the "high sediment delivery" areas will be eliminated during unit layout, and refers to a different Soils Map (#3). The FEIS indicates that only 4 acres overlap with these categories, yet the maps are unclear. Given the risks portrayed in the analysis, we are also concerned that areas of moderate sediment delivery potential could reach streams. As such, areas of moderate sediment delivery potential should also be protected, especially from regeneration prescriptions.

Suggested remedy: *We encourage you to eliminate all landslide prone areas from regeneration logging.*

Response: It is recognized that the maps are difficult to read because of the extended project area. Soil Maps (PF Doc. SOIL-44) were therefore added to provide smaller scale maps for clarification and to depict more detail, demonstrating that the 4 acres (0.002 percent) of high mass failure and sediment delivery potential are truly isolated occurrences located on the boundary of units. The slivers occur on the western portion of Unit D2 and the southern portion of Unit G3.

The FEIS 3-68 states that "[i]n an effort to reduce potential problems, hazard prone landtypes were identified during the initial project analysis and excluded from proposed harvest activities. The intent was to delineate activity areas that avoid potential hazard areas; however, several "slivers" (areas of overlap) may still remain due to GIS mapping and will be eliminated once layout of the units is finalized (Map Appendix - Soils Map 3)."

Additional information in the FEIS under the Mass Failure and Sediment Delivery Potential headings on page 3-68 and 69 disclose that "all landtypes exhibit low and moderate…potential[s] (Table 3-19 and PF Doc. SOIL-5 and 6) with the exception of high ratings on 3 acres (MU106) and 1 acre (MU365) for Alternatives 2 and 5". FEIS Table 3-19 on page 3-68 also provides a summary of potential hazards for activity area acres. Landtype descriptions (PF Doc. SOIL 3 and 4) and a detailed breakdown of hazard ratings, acres, and associated units were provided in PF Doc. SOIL 5 and 6 (for Alternatives 2 and 5) to supplement and accompany the maps.

Issue 19. (SOIL) ***(Objections page 13)***

The FEIS also fails to consider the combined potential impacts of a fire and the soil disturbance from the proposed logging activities. This is especially pertinent because of the increased fire risk in logged areas.

Suggested remedy: *None*

Response: It is well known that natural disturbance events commonly reset watersheds and influence water quality and stream habitat (FEIS 3-70). Wildfire is a natural component in forest watersheds and has influenced forest soils and watershed processes for thousands of years. However, as a result of fire suppression during the last century, natural fire regimes do not

exist anywhere in northern Idaho today (Smith and Fisher 1997). One of the project's desired future conditions is to reduce risk of soil damage or loss of soil productivity (FEIS 1-5), which includes a reduction of detrimental effects to soil productivity from hydrophobic soils and erosion.

Fire would not be eliminated as an ecological process and proper management through fuel reduction and prescribed burning would sustain a future environment where fire is integrated and soil damage is minimal (FEIS 4-86). Mitigation of unwanted potential fire effects through fuel treatments would reduce the chance of detrimental effects to soil productivity and would add little to no additional impact to the project area.

In regards to increased fire risk in logged areas, the FEIS, page 4-80, discusses that "timber harvesting would open up tree canopies and logging slash from tree limbs, tops, and un-merchantable pieces would add to existing *short-term* fuel loadings. Canopy removal would allow wind and sunlight to penetrate, heat, and dry the debris, which could increase potential fire intensity and severity until the slash is treated or naturally abated. However, the *long-term* risk for a stand-replacing wildfire would be reduced by creating more open stand structures that would have lower accumulations of large diameter fuels and that would be less likely to support crown fires (see Specialist's Report on Fire and Fuels)".

FEIS page 4-82 further recognizes that "[t]he residual logging debris that would be lopped and scattered or that could not be grapple piled and burned would increase potential fire intensity and severity for a few years until snow could compress the debris and the fine organics would decompose".

Choosing the No-Action alternative has drawbacks as well. "Under the No Action Alternative, stands currently at high mortality risk would not be treated, which may increase the risk of stand loss due to wildfire, severe burning, erosion concerns, and loss of soil nutrients. Moreover, the introduction of weeds and unwanted flora following a fire could lead to higher competition between less desirable plants and native vegetation" (FEIS 4-79). Reduced soil productivity would be possible through loss of organics (duff, soil wood, coarse woody debris), nutrients, microbial populations, and increases in noxious weeds (FEIS 4-78).

Issue 20. (SOIL) (Objections page 20)

A) We are concerned that long-term soil productivity will be negatively impacted by this project. B) We are concerned that landslide-prone areas will be impacted and become susceptible to mass failures. C) The analysis failed to adequately consider the site-specific, and long-term, impacts associated with pile burning.

Suggested remedy: *None*

Response: A) Besides FEIS page 2-8, it is recognized throughout the document and, particularly within the soils report, that "[m]anagement activities could affect the soil and in turn affect soil productivity, hydrology, water quality, and other ecosystem components in the area".

Productivity was discussed in the FEIS on pages 2-6 and Table 2.6; 2-26; Table 2-16 on page 2-42; 4-86; 68, 69, 4-78 through 4-87; more in-depth qualitative discussions on soil quality can be found under the following headers: Soils and Productivity (3-67), Loss of Nutrients (3-67); Soil physical, chemical, and biological properties (4-76); Direct and Indirect Effects of Activities on Soil Productivity (4-81); Direct and Indirect Effects of Activities on Coarse Woody Debris and Organic Matter (4-81 to 82); and Cumulative Effects of Activities on Coarse Woody Debris, Organic Matter, and Soil Productivity (4-86).

The National Forest Management Act (NFMA) directs the Forest Service to maintain the soil resource and soil productivity. Therefore, soil was recognized as an external issue and aided in the development of the proposed action and alternatives for the Myrtle HFRA project (FEIS 2-8). Practices were designed to minimize the detrimental impacts of soil compaction, displacement, severe burning, and nutrient and organic matter depletion on long-term soil productivity and are listed under "Features Designed to Protect Soil and Soil Productivity" from FEIS page 2-26 through 2-28. The use of these practices would insure that the soil quality standards listed in the Forest Plan and Regional Soil Quality Standards would be met. Best Management Practices (BMPs) related to soil and sediment processes also apply and are outlined in "Features Designed to Protect Water and Aquatic Habitat" and Appendix C-BMPs.

B) See Issue #18 for an earlier discussion about mass failure and landslide prone areas. To re-emphasize, hazard prone landtypes were identified during the initial project analysis and excluded from proposed harvest activities. The intent was to delineate activity areas that avoid potential hazard areas (FEIS 3-68). The analysis also recognized, disclosed, and discussed other areas of potential landslides or locations were soil movement was found during the field visits (FEIS 3-68, 69; PF Doc. SOIL-14 and 29) and excluded these areas from management activities.

In the spring of 2007, multiple debris flows occurred in the burn area of the Myrtle Creek fire (PF DOC. SOIL-45). The geotechnical engineer reviewing the damage, which impacted thoroughfare on the main Myrtle Creek road (FS633) and FS633E, summarized several causal factors: high groundwater table due to lack of transpiration of soil moisture by trees and understory vegetation, snow pack containing high water content (rain-on-snow event), rapid melting of snow pack, saturated soil conditions, reduced root cohesion due to logging and the subsequent removal of the remaining stand by fire.

Two opposing views are considered in regards to these recent failures. Were soils severely burned because the area was logged and slash remained on the ground to fuel the Myrtle Creek fire in 2003 or would the area have burned less, in a similar fashion, or worse if it would not have been logged prior to the fire? Speculation could go in either direction but one thing is certain: debris flows have occurred in this drainage long before logging took place as seen in old aerial photography and dissected side slope topography. The underlying granitic geology is very susceptible to turn hydrophobic during fires (Doerr et al. 1996; Robichaud and Hungerford 2000) because the temperature gradients in coarser grained and sandy soils can be greater since the amount of surface area on which organic compounds can condense is less. Any fire in the vicinity therefore has the potential to result in post-burn debris movement, especially after rain-on-snow events that result in excessive water availability.

C) Effects of pile burning were itemized in the summary on FEIS page 4-79 and state that "[l]ocalized areas of soil sterilization, reduced water infiltration, and lost ground cover below burn piles" can impact soil productivity. FEIS, page 4-82, also states that "[w]hen burn piles are large, nutrient losses from heat and volatilization could be considerable. Mitigation therefore recommends that burn piles be small (approximately 10 to 18 ft. diameter) and numerous, rather than large and few. In some cases, burning of the slash piles may create localized patches of hydrophobic soils for as much as one to two years, but the areas are ***generally not large or extensive enough to alter the slope hydrologic response or long-term soil productivity"*** (emphasis added).

Issue 21. (SOIL) (Objection Appendix C #51)

There will be significant levels of landings under the action alternatives. Therefore, the EIS has failed to reasonably analyze and disclose the area of soils that will persistently and irreversibly damaged by landing construction and reconstruction.

Suggested remedy: None

Response: Page 14 in the FEIS Map Appendix displays proposed haul routes and service landings. It is quite clear that all proposed landings and helicopter pads will be located on existing Forest Service system roads with no new construction. Two landings are located on private land, which was disclosed as follows: "A jump-up landing on private land just west of proposed Unit B5 (Alternative 2 only) and one landing in a private parcel adjacent to G1 would be utilized" (FEIS 4-80).

As stated in FEIS 4-77, "[r]oads and landings that remain on the landscape for future use (system roads) are considered irretrievable effects on productivity as these lands become "dedicated" to the permanent transportation system." Rather than constructing new landings within each activity area, the proposed landings are located on turnouts along system roads – again, system roads are dedicated areas not just for the purpose of hauling logs but rather to be utilized by the public to access forest land.

Issue 22. (SOIL) ***(Objection Appendix C #54)***
The criteria used to identify soil impacts preclude reasonable disclosure of existing soil and likely future soil impacts. The EIS fails to reasonably disclose likely existing soil conditions and likely future soil conditions, because it only discloses the extent of areas that exceed the thresholds for: a) increases in bulk density; b) soil displacement; c) soil molding and rutting; d) burned area; and e) surface and mass erosion. Only soil conditions that exceed such thresholds are considered to constitute "detrimental soil conditions" (DSC) in the EIS. Only the estimated extent of DSC is disclosed in the EIS. This precludes reasonable disclosure of the extent and intensity of existing and likely future soil damage in several ways. (Objection Appendix C #52)

Similarly, soil rutting, soil displacement, and soil erosion to a degree that is less than the threshold for DSC would degrade soils and their processes, yet the extent of such areas is not disclosed due to the DSC criteria. Therefore, by only analyzing conditions that exceed these "DSC" thresholds, existing and likely future, cumulative negative soil impacts are consistently underestimated and undisclosed in the EIS.

Suggested remedy: *None*

Response: The project file and FEIS contains ample reference that existing conditions were evaluated – and not just in an office exercise but hands-on in the field while spending close to two field seasons gathering on-the-ground data. The analysis clearly complies with National Environmental Policy Act (NEPA) and represents a hard look at the soil resource data and information. All findings were disclosed either in the FEIS or can be found in supporting documents in the soils project file. PF Doc. SOIL-1 provides all the monitoring sheets with transect data and a summary for all units with past disturbances (D1, D2, and G1 through 11). PF Doc. SOIL-2 contains documentation of site visits by the forester and fuels specialist verifying that all remaining units: B-1, 3, 4, 5, 6; D6, 9; E 3, 8; and F1 have no signs of past harvest activities. This confirms that every unit was visited on the ground to verify if past disturbances occurred and, if so, the extent of disturbance was evaluated and disclosed.
In addition, eleven field reports (PF Doc. SOIL 22 through 32) summarize findings by the Forest Soil Scientist from numerous visits to the project area – not just the activity areas. Affected environment and existing conditions are discussed in Chapter 3 of the FEIS (pages 3-64 through 71) and summarized for Alternative 2 in Table 3.20 on page 3-72. A summary for Alternative 5 can be viewed in PF Doc. SOIL-8. Additional information on existing condition is available in the form of landtype descriptions (PF Doc. SOIL-3 and 4); landtype hazard calculations (PF Doc. SOIL-5, 6, and 17); distribution of burn severity from the Myrtle 2003 fire (PF Doc. SOIL-15 and 37); Geology (PF Doc. SOIL-12 and 13); and various other calculations and summaries (PF Doc. SOIL-7, 18, 19, 36, 41)

Future soil conditions, or the potential impacts to soils from the proposed management activities, are also readily available throughout the project file and FEIS. Proposed harvest treatment impacts for both Alternatives were calculated using the Disturbance Spreadsheet (PF Doc. SOIL-9 and 10). Results for Alternative 2 were incorporated into Table 3.20 (page 3-72) and show that approximately 151 acres of soils are expected to be impacted from harvest and temporary road re-construction. Alternative 5 (PF Doc. SOIL-8) is estimated to impact approximately 87 acres of soil. These estimates are further discussed and put into context on page 4-79 as well as in Table 2.16 on page 2-42. In addition, the Environmental Consequences section in the FEIS page 4-76 though 87 discusses potential future impacts on soil conditions by addressing direct, indirect, and cumulative effects on soils from vegetation treatments (4-79, 83, 84), roads (4-80, 83, 85, 86), landings (4-80), mitigation measures (4-80), soil productivity (4-81), coarse woody debris and organic matter (4-81, 86), prescribed burning and slash disposal (4-82, 85, 86), reforestation (4-82), noxious weed control (4-82, 85), wildfires (4-84), slope stability (4-85), and gathering of forest products (4-85).

Detrimental soil damage is defined in Forest Service manual direction Region 1 Soil Quality Standards (SQSs) (PF Doc. SOIL-35). There is also a productivity difference between soil disturbance and detrimental damage. Detrimental damage equates to site impairment; the natural community cannot grow or is not sustainable. Size and extent of the disturbance is an important consideration here. For example, small areas of compaction may not impair root development and plant growth while large areas of deep or dense compaction may result in conversion of a site to annual species. Soil disturbance acknowledges that humans have changed the site (compaction, displacement, burning, reduced organic matter, etc.) and affected the soil but that the natural community and soil processes are still in place and are sustainable.

Based on the R1 SQSs, it is therefore correct that soil conditions that exceed 15 percent within an activtiy area are considered to constitute "detrimental soil conditions" in the FEIS. However, as stated above, it is quite clear that all additional findings have been disclosed and that any disturbance, even when less than or at 15 percent, has been evaluated to reduce or keep potential impacts as low as possible. "Features Designed to Protect Soil and Site Productivity" in Chapter 2 (FEIS 2-26 to 28) also discloses that techniques to protect soils, such as winter logging, slash mats, designated skid trails etc., have been incorporated in the attempt to prevent soil disturbance before the 15 percent disturbance levels are reached.

Issue 23. (SOIL) (Objection Appendix C #52)
The DSC criteria obscure existing soil damage and likely future soil impacts, because soils that have had impacts that approach, but do not exceed, these threshold criteria are, nonetheless, adversely affected. For instance, it is extremely well-documented that increases in bulk density significantly reduce the ability of soils to absorb and store water, which contributes to elevated runoff and erosion. The EIS's use of a criterion for bulk density blinds it to the more extensive chronic degradation of soils by compaction under existing conditions and in response to the action alternatives.

Suggested remedy: None

Response: Please refer to the previous Issue #22 for an extensive reply to the first part of this objection. However, it is not quite clear what the appellants are trying to say in the latter part of this objection besides repeating the same concerns and just wording it differently. To attempt an answer, the FEIS page 3-70 lists four different scenarios (displacement, rutting, surface, erosion, and severe burning – also listed in FEIS 3-64; second bullet) besides just compaction and an increase in bulk density as detrimental disturbance. When an activity area is transected on the ground, every single one of these five conditions comes into play, not just extensive chronic compaction and increases in bulk density.

Issue 24. (SOIL) ***(Objection Appendix C #72)***

It is critical to analyze and disclose the probability of fire, because it is not valid to simply compare treatment effects with the effects of high severity fire, as the EIS does (e.g., pp. 4-78, 4-79), because high severity fire is not certain to occur within the project area during a given timeframe. In contrast, the action alternatives are sure to damage soils, increase sediment delivery, and elevate peak flows, as the EIS concedes, albeit, wholly inadequately. Although the EIS utterly fails to disclose it, even proponents of fuel treatments have explicitly recommended that the risk of fire occurrence should be estimated in order to reasonably analyze and disclose the likely tradeoffs between the damaging impacts of mechanical fuel treatments versus those from fire (Agee and Skinner, 2005). Notably, the data to estimate the likelihood of fire is plainly available and the task is eminently tractable. The EIS simply failed to include such an analysis.

Suggested remedy: *None*

Response:
The Objector is correct, the probability of a high severity fire is not certain to occur within the project area during a given timeframe. The fact, however, is that when a fire breaks out, the chances for high severity fire effects on soils can be much higher in untreated areas with excessively heavy fuel loads compared to those that have successfully completed treatment, including post-harvest logging slash (Certini 2005; Cram et al. 2006; Graham et al. 2004; Gorman 2003; Keane et al. 2002). Also refer to Issue 6 – App. C – Fire and Fuels Response to Comments.

On a side note, the Objector contradicts himself by stating in one of the above sentences that "…the EIS concedes, albeit, wholly adequately" while in the next sentence he claims that "….the EIS utterly fails to disclose it…", by "it" meaning damage to soils? It is therefore difficult and often impossible to follow the thought process that the Objector puts on paper (and not just for this point) and to respond adequately to repetitive statements that go on point after point yet state the same in often nebulous ways.

In an attempt to answer this, the soils analysis, in conjunction with the watershed analysis and modeling, adequately discloses potential damage to soils and hydrology from both fire and proposed management activities (FEIS 4-76 to 87, but specifically for acres in Table 3.20, page 3-72, PF Doc. SOIL-8; 4-79, 80, 85; also see Issue #3). Increased sediment delivery was calculated using the WEPP FuME model, a culmination of the Disturbed WEPP, Road WEPP, and GeoWEPP model used in the hydrology/watershed section to predict sediment yield changes due to harvest and fire activity. These models also were used to predict sediment erosion from roads to incorporate a more detailed component of sediment measurements. In summary, the results predict that sediment erosion could be as high as 100 times greater in magnitude than that produced by timber harvesting if a stand-replacing wildfire were to occur (FEIS 4-21, 28, 38).

The Objectors cite Agee & Skinner (2005) who make a valuable comment in their paper by stating "[w]hile the impacts of thinning and burning can be predicted, and may have some negative environmental impacts, these impacts need to be evaluated against the option of ''no action''. That is what the Myrtle HFRA project is all about – the impacts of thinning and prescribed burning can be reasonably predicted whereas the potential impacts of wildfire, especially on soils within this municipal watershed, is virtually unpredictable because of naturally variable conditions during the time of burning. However, past examples, such as the Sundance fire that burned 56,000 acres in 1967 just south of Myrtle Creek, **still display reduced soil productivity to this day. In a nutshell, silviculturally treated stands experience less severe fire damage and subsequently less loss of litter and herbaceous loading. Therefore, these stands are less susceptible to soil loss and more conducive to residual plant growth and recovery (Cram 2006).**

Issue 25. (SOIL) (Objection Appendix C #91)

Fire, including that which burns at high severity, has numerous ecological benefits, which the EIS did not adequately disclose or factor into its assessments of the alternatives' impacts. For instance, higher severity fire is a very effective agent in increasing large wood debris recruitment and creating snags, which are highly beneficial to soils and numerous aquatic and terrestrial species (Lindenmayer et al., 2004; Beschta et al., 2004; Hutto, 2006; Baker et al., 2006). However, the EIS fails to adequately factor the beneficial aspects of fire into its assessment and disclosure of the alternatives impacts.

Suggested remedy: *None*

Response: The FEIS, page 4-86, states that "[f]ire would not be eliminated as an ecological process and proper management through fuel reduction and prescribed burning would sustain a future environment where fire is integrated and soil damage is

minimal. Mitigation of unwanted potential fire effects through fuel treatments would reduce the chance of detrimental effects to soil productivity and would add little to no additional impact to the project area…."

Fire plays an important part in the ecosystem and its beneficial aspects for soils are numerous – **as long as high burn severities are not extensive enough to sterilize large areas of soils and reduce long-term soil productivity through the reduction or elimination of organic material (duff) and coarse woody debris**. The FEIS describes wildfire effects in greater detail on page 4-78 and 3-70 and by disclosing that "[w]ildfire is a natural component in forest watersheds and has influenced forest soils and watershed processes for thousands of years. However, as a result of fire suppression during the last century, natural fire regimes do not exist anywhere in northern Idaho today."

Currently, the amount of coarse woody debris (CWD) present in the project area varies (PF Doc. SOIL-1). "Many stands, especially those proposed for first entry, contain high amounts of downed wood originating from root disease and beetle infestation. These amounts greatly exceed the recommendations of Graham et al. (1994) and Brown et al. (2003) and contribute to hazardous fuel loading. Historically, fire would have moderated the amount of accumulated coarse woody debris (Smith and Fischer 1997)" (FEIS 4-81).

Based on observation and gathered data (PF Doc. SOIL-1; PF Doc. FF-003), there does not seem to be a shortage of CWD in the proposed harvest units with the exception of Unit G1, G3, and G4. The FEIS 2-27 (g) and Table 2.10 state design features for the retention of coarse woody debris (also see Errata sheet). In short, higher severity fire may be a good way to recruit snags – but the question remains whether a watershed full of snags and extensive hillsides of severely burned soils is more beneficial than a watershed with forest interspersed with treated units, appropriate levels of CWD, and only locally impacted soils.

H. INVENTORIED ROADLESS AREAS (IRA)

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (IRA) page 32.

The Forest Service Fails to Comply with 36 C.F.R. § 294.13 which Prohibits the Sale, Removal or Cutting of Timber in Inventoried Roadless Areas (IRA).

Suggested Remedy: *Ban any and all logging in roadless areas greater than 1000 acres.*

Response: The CFR regulations can be found verbatim in the FEIS on p. 3-72. "This project is guided by the January 2001 Roadless Rule (incorporated at 36 CFR 294) that generally prohibits road construction and timber removal in inventoried roadless areas on NF lands, with certain exceptions:

> ***§ 294.13 Prohibition on timber cutting, sale, or removal in inventoried roadless areas.***
> *(a) Timber may not be cut, sold, or removed in inventoried roadless areas of the National Forest System, except as provided in paragraph (b) of this section.*
> *(b) Notwithstanding the prohibition in paragraph (a) of this section, timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following circumstances exists. The cutting, sale, or removal of timber in these areas is expected to be infrequent.*
> *(1) The cutting, sale, or removal of generally small diameter timber is needed for one of the following purposes and will maintain or improve one or more of the roadless area characteristics as defined in § 294.11.*
> *(i) To improve threatened, endangered, proposed, or sensitive species habitat; or*
> *(ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;*
> *(2) The cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited by this subpart;*
> *(3) The cutting, sale, or removal of timber is needed and appropriate for personal or administrative use, as provided for in 36 CFR part 223; or*
> *(4) Roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction*

of a classified road and subsequent timber harvest. Both the road construction and subsequent timber harvest must have occurred after the area was designated an inventoried roadless area and prior to January 12, 2001. Timber may be cut, sold, or removed only in the substantially altered portion of the inventoried roadless area".

Timber may be cut, sold, or removed in an IRA if the Responsible Official determines that one of the circumstances listed in the exceptions listed in § 294.13 exist. The Myrtle HFRA project meets more than one of the exceptions:

§ 294.13(b)(1) – the term "generally smaller diameter timber" is described in the FEIS on pp. 4-88, 89 and 4-94 through 97. Refer to the photos and text that show the smaller trees (ladder fuels) that would be removed for fuels reduction. From the FEIS on p. 4-97, "The irregular shelterwood prescriptions are in stands generally dominated by trees smaller than 10 inches DBH. The large diameter western larch, white pine, and Douglas-fir (in addition to large-diameter trees of other species) would be retained in the overstory and no future overstory removals would be scheduled. The commercial thinning prescriptions would focus on retention of the biggest and best trees available in the stand. The average size of the trees removed would typically be less than 9 inches DBH". There are no current Forest Plan standard on the IPNF that defines the diameter of a small tree. Local research scientists (Graham and others, 2006) classified trees less than 12" dbh as generally smaller timber. Field data in the table below indicate 87% of the trees to be cut for fuels reduction in the Inventoried Roadless Areas will be less than 12" dbh.

Table 1. Field Data Trees Generally Smaller than 12” DBH

* CTPA – cut trees per acre

ALL UNITS (GENERALLY SMALL < = 12" DBH)							
Unit	**7-12"**	**12-15"**	**15"+**	**TOTAL CTPA**	**7-12"**	**12-15"**	**15"+**
B1	72.8	29.8	7.4	110.0	66.2%	27.1%	6.7%
B3	146.7	4.2	11.5	162.4	90.3%	2.6%	7.1%
B4	92.0	0.0	0.0	92.0	100.0%	0.0%	0.0%
B5	107.2	7.3	0.0	114.5	93.6%	6.4%	0.0%
B6	144.9	1.4	0.0	146.3	99.0%	1.0%	0.0%
D1	147.0	16.7	1.1	164.8	89.2%	10.1%	0.7%
D6	133.9	14.6	0.0	148.5	90.2%	9.8%	0.0%
D9	106.8	9.2	3.5	119.5	89.4%	7.7%	2.9%
E3	44.0	0.0	3.4	47.4	92.8%	0.0%	7.2%
E8	82.8	2.4	0.0	85.2	97.2%	2.8%	0.0%
F1	98.3	15.5	1.0	114.8	85.7%	13.5%	0.9%
G1	77.3	16.1	5.8	99.2	77.9%	16.2%	5.8%
G10	31.8	7.4	2.7	41.9	75.9%	17.6%	6.4%
G11	15.1	4.6	0.0	19.6	76.7%	23.3%	0.0%
G2	44.7	0.7	0	45.4	98.5%	1.5%	0.0%
G3	19.7	4.5	0.0	24.1	81.5%	18.5%	0.0%
G4	13.4	1.3	3.7	18.4	72.6%	7.3%	20.1%
G5	62.3	0.6	0	62.9	99.0%	1.0%	0.0%
G6	96.8	24.2	5.3	126.3	76.7%	19.2%	4.2%
G7	156.5	33.8	2.0	192.3	81.4%	17.6%	1.1%
G8	69.2	16.1	0.6	86.0	80.5%	18.8%	0.7%
G9	81.9	18.4	3.9	104.2	78.6%	17.7%	3.8%
	83.9	10.4	2.4	96.6	**86.8%**	10.8%	2.4%
UNITS INTERSECTING ROADLESS AREAS (GENERALLY SMALL < = 12" DBH)							
Unit	**7-12"**	**12-15"**	**15"+**	**TOTAL CTPA**	**7-12"**	**12-15"**	**15"+**
B1	72.8	29.8	7.4	110.0	66.2%	27.1%	6.7%
B3	146.7	4.2	11.5	162.4	90.3%	2.6%	7.1%
B4	92.0	0.0	0.0	92.0	100.0%	0.0%	0.0%
B5	107.2	7.3	0.0	114.5	93.6%	6.4%	0.0%
B6	144.9	1.4	0.0	146.3	99.0%	1.0%	0.0%
D1	147.0	16.7	1.1	164.8	89.2%	10.1%	0.7%
D6	133.9	14.6	0.0	148.5	90.2%	9.8%	0.0%
D9	106.8	9.2	3.5	119.5	89.4%	7.7%	2.9%
E3	44.0	0.0	3.4	47.4	92.8%	0.0%	7.2%
E8	82.8	2.4	0.0	85.2	97.2%	2.8%	0.0%
F1	98.3	15.5	1.0	114.8	85.7%	13.5%	0.9%
G8	69.2	16.1	0.6	86.0	80.5%	18.8%	0.7%
G9	81.9	18.4	3.9	104.2	78.6%	17.7%	3.8%
	94.6	12.0	2.5	109.1	**86.7%**	11.0%	2.3%

The broad scale Regional Mapping Technical Guide (USFS 2005) uses 10” dbh as a breakpoint when classifying generally small trees. Field data listed in the table below indicates that about 63% of the trees to be cut for fuels reduction in the Inventoried Roadless Areas will be less than 10” dbh.

Table 2. Field Data Trees Generally Smaller than 10” DBH

ALL UNITS (GENERALLY SMALL < = 10" DBH)							
Unit	**7-10"**	**10-15"**	**15"+**	**TOTAL CTPA**	**7-10"**	**10-15"**	**15"+**
B1	44.9	57.7	7.4	109.9	40.8%	52.4%	6.7%
B3	72.2	78.7	11.5	162.4	44.4%	48.5%	7.1%
B4	88.6	3.5	0.0	92.0	96.2%	3.8%	0.0%
B5	86.5	28.0	0.0	114.5	75.5%	24.5%	0.0%
B6	137.2	9.1	0.0	146.3	93.8%	6.2%	0.0%
D1	95.0	68.7	1.1	164.8	57.6%	41.7%	0.7%
D6	105.4	43.2	0.0	148.5	70.9%	29.1%	0.0%
D9	91.3	24.7	3.5	119.5	76.4%	20.7%	2.9%
E3	27.6	16.3	3.4	47.4	58.4%	34.5%	7.2%
E8	65.7	19.5	0.0	85.2	77.2%	22.8%	0.0%
F1	79.3	34.5	1.0	114.8	69.1%	30.0%	0.9%
G1	45.9	47.5	5.8	99.2	46.3%	47.9%	5.8%
G10	23.5	15.8	2.7	41.9	56.0%	37.6%	6.4%
G11	9.5	10.1	0.0	19.6	48.4%	51.6%	0.0%
G2	26.4	18.9	0	45.4	58.3%	41.7%	0.0%
G3	15.4	8.8	0.0	24.1	63.7%	36.3%	0.0%
G4	9.9	4.8	3.7	18.4	53.9%	26.0%	20.1%
G5	37.2	25.7	0	62.9	59.1%	40.9%	0.0%
G6	68.6	52.4	5.3	126.3	54.4%	41.5%	4.2%
G7	104.5	85.8	2.0	192.3	54.3%	44.6%	1.1%
G8	45.8	39.6	0.6	86.0	53.3%	46.0%	0.7%
G9	54.3	46.0	3.9	104.2	52.1%	44.2%	3.8%
	60.7	33.6	2.4	96.6	**62.8%**	34.8%	2.4%
UNITS INTERSECTING ROADLESS AREAS (GENERALLY SMALL < = 10" DBH)							
Unit	**7-10"**	**10-15"**	**15"+**	**TOTAL CTPA**	**7-10"**	**10-15"**	**15"+**
B1	44.9	57.7	7.4	109.9	40.8%	52.4%	6.7%
B3	72.2	78.7	11.5	162.4	44.4%	48.5%	7.1%
B4	88.6	3.5	0.0	92.0	96.2%	3.8%	0.0%
B5	86.5	28.0	0.0	114.5	75.5%	24.5%	0.0%
B6	137.2	9.1	0.0	146.3	93.8%	6.2%	0.0%
D1	95.0	68.7	1.1	164.8	57.6%	41.7%	0.7%
D6	105.4	43.2	0.0	148.5	70.9%	29.1%	0.0%
D9	91.3	24.7	3.5	119.5	76.4%	20.7%	2.9%
E3	27.6	16.3	3.4	47.4	58.4%	34.5%	7.2%
E8	65.7	19.5	0.0	85.2	77.2%	22.8%	0.0%
F1	79.3	34.5	1.0	114.8	69.1%	30.0%	0.9%
G8	45.8	39.6	0.6	86.0	53.3%	46.0%	0.7%
G9	54.3	46.0	3.9	104.2	52.1%	44.2%	3.8%
	68.7	37.9	2.5	109.1	**63.0%**	34.7%	2.3%

CTPA – cut trees per acre

§ 294.13(b)(ii) *– To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;*

The need to treat fuels in Inventoried Roadless Areas is explained in the FEIS on p.4-87.

"The drainages in the project area are oriented with the prevailing wind direction – typical winds are light to moderate from the southwest. Late afternoon winds tend to funnel down the drainages. This orientation may aid in fire spread. Steep slopes on the sides of the drainages can contribute to rapid, upslope runs. District fire records show that it is not uncommon for wildfires in the Selkirks to move down drainage and northward from one drainage to the next. (See map of the 1926 fire in Chapter 3.) Selection of potential treatment areas was based on the following fundamental factors:

- The need to reduce the risk of mass failures from post fire hydrophobic soils adjacent Myrtle Creek and its tributaries, as they are the transporting mechanism for post-fire sediments.
- The need to reduce fuels in the path of historic burn patterns (see Figure 3.9 map of the 1926 fire that burned from the south to the north across several watersheds.)
- The need to treat areas at a high risk of crown fire hazard, and areas with poor ecological integrity (described in the Vegetation discussion, also see Figure 3.3 map of the terrestrial integrity in the project area)."

The fuel reduction treatment units, strategically placed on the landscape, are an integral part of the fuels reduction strategy to slow the spread of fire and keep fire out of the tree canopies, to help protect Myrtle Creek and its tributaries. The fuels reduction treatments complement this project's purpose and need (maintaining Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry; reducing hazardous fuels in Myrtle Creek watershed and adjacent forests; and, trending vegetation in Myrtle Creek watershed and adjacent forests toward conditions that would be less susceptible to catastrophic fire, while maintaining and restoring habitat for fish and wildlife species) by accomplishing the following:

1) fostering long-term reduction of risks from unwanted or undesirable wildfire, and

2) reducing or avoiding the associated post-fire effects within the municipal watershed for the City of Bonners Ferry, Idaho.

A large scale map of the IRAs can be found in the FEIS on p. 3-81. Management Area descriptions listed in the IPNF Forest Plan can be found in the FEIS on pp. 3-75, 76. A map illustrating the Departure from Natural Fire Regimes is described in the FEIS on p 3-41. The effects of implementing Alternatives 1, 2 or 5 are described in the FEIS on pp. 4-69, 70.

Removing the smaller timber (ladder fuels) is necessary to meet the Purpose and Need of the project by trending portions of project area towards desired conditions and "to emulate the size, pattern, and intensity of disturbances to approximate historical forest structures and conditions – not because they are historical, but because they are sustainable – that is, vigorous, self-perpetuating, and at low risk to biotic agents and catastrophic fire" (Arno and Fiedler 2005 (Fiedler 2000a)) FEIS p. 3-31. The risks to Terrestrial Integrity of the overall ecosystem in the project area are described in the FEIS on pp.3-44, 45.

A summary of the effects of the Alternatives in the IRAs can be found in the FEIS on pp. 2-40, 41, and 4-97.

The 1935 photo on page 4-91 of the FEIS provides a snapshot of the aftermath of the 1926 fire, after it burned across Myrtle Creek and a number of the tributaries. When compared to the photo in the FEIS on p. 4-92, "all of the proposed treatment areas have departed from their respective historical stand composition and structure to some degree (refer to Fire Regime Condition Class discussion in Chapter 3 – Fire and Fuels section). Also, the proposed fuel reduction treatments parallel the disturbance regimes found historically in the Myrtle and Snow Creek ecosystems".

In contrast to the 1926 fire, the proposed units in Myrtle Creek would leave a mosaic of a 20-40% canopy cover composed of the largest overstory trees (FEIS pp.2-13, 14, and 28). In addition, the proposed units would not negatively impact the riparian buffer zones or the sensitive soils adjacent Myrtle Creek and its tributaries as the 1926 fire did (see Fig 4.11, FEIS p. 4-91).

§ 294.13(b)(4) *Roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction of a classified road and subsequent timber harvest. Both the road construction and subsequent timber harvest must have occurred after the area was designated an inventoried roadless area and prior to January 12, 2001. Timber may be cut, sold, or removed only in the substantially altered portion of the inventoried roadless area".*

The IRAs intersecting this project are listed in the FEIS on 3-77. The project area contains portions of two Inventoried Roadless Areas – Selkirk #125 and Kootenai Peak #126. The Selkirk IRA #125 is about 97,957 acres total . The Kootenai Peak IRA #126 is currently about 4844 acres. The official amount from the Nov. 2000 - Forest Service Roadless Area Conservation FEIS, Vol II p.-66 is 4,500 acres, less than the 5000 acre required; however, it is being managed as an IRA until further notice. The Myrtle Creek HFRA project area has been roaded and managed since the 1950's and contains a checkerboard of ownerships and road systems FEIS 1-2 and Map Appendix pp. 4 and 18. The IRAs and their Roadless Characteristic (Resource Indicators) are described in the FEIS on pp. 3-77-80. The "substantially altered" portions IRAs with respect to their Natural or Undeveloped characteristics (or lack thereof) may be viewed using a virtual over flight on the

World Wide Web using freeware such as Google Earth ™. The photos on display are from 2004, one year after the Myrtle Creek fire. http://earth.google.com/ .

From the FEIS on p. 3-78, "since the late 1980s, some development has occurred within this roadless area (Kootenai Peak IRA). The Curve Creek Timber Sale treated approximately 270 acres and extended the road system (Curve Creek EA and DN, 1986). Then, the roadless area (Kootenai Peak IRA) was entered by the Snow Creek Timber Sale which treated approximately 60 acres and built about 0.5 mile of road. These changes as well as previous changes in the size were documented by the Snow Creek project (Snow Creek EA and DN, 1993). Approximately 130 acres of timber harvest analyzed and approved in the Myrtle-Cascade EIS occurred within the roadless area, along the Myrtle Creek road. Also, with the advent of better mapping capabilities and GIS technology, the acreage is now calculated as approximately 4,844 acres as compared to the 4974 acres reported in the Draft Comprehensive Evaluation Report prepared by the IPNF in May 2006 (USDA, 2006)".

It should also be noted that the current 2001 Roadless Area boundaries and Management Areas (FEIS p.3-75, 76) would change with the IPNF Forest Plan revision. Essentially, none of the units proposed with the Myrtle HFRA project would remain in an IRA. Click on the following link for a map showing the proposed changes in Management Areas and consequentially the boundary to the IRAs (http://www.fs.fed.us/kipz/maps/dp-map/ipnf/county/boundary_co_11x17.pdf). This project is also in line with the State of Idaho's Roadless Area Petition filed with the Secretary of Agriculture, reviewed (http://gov.idaho.gov/roadless_petition/IdahoPanhandleNF_Kootenai%20Rev%20091506.pdf) and recommended by the Department's Roadless Area Conservation National Advisory Committee, and accepted by the Secretary on December 22, 2006. The proposed fuels reduction areas are within roadless areas identified under the State petition as being within the General Forest Area management theme. This theme permits road construction and timber harvest after necessary environmental analysis is completed.

Issue 2. (IRA) page 33.
The FS has arrogantly and egregiously violated the Roadless Rule, 36 C.F.R. §294.10, which was adopted in January of 2001 for the purpose of protecting the "last reservoirs of ecological diversity." "Roadless regions constitute the least-human-disturbed forest and stream systems, the last reservoirs of ecological diversity, and the primary benchmarks for restoring ecological health and integrity." (Rhodes et al. 1994). Here, the Forest Service disregards the critical importance of Inventoried Roadless Areas (IRA) and proposes to log in 14 of 24 units that are entirely or partially within either the Kootenai Peak IRA or the Selkirk IRA.

Pursuant to 36 C.F.R. §294.10, the FS may not conduct logging in an inventoried roadless area unless: 1) the timber is small-diameter; and 2) the removal of timber is needed to maintain or restore the desirable characteristics of ecosystem composition and structure.

Here, the logging will not be limited to small diameter timber. According to the FEIS, "about 395 acres of group selection cuts are proposed in inventoried roadless areas. FEIS at 4-89. "These prescriptions would feature the protection and maintenance of large (greater than 21" DBH) old trees. Id. Apparently the FS believes that it will be in compliance with the Roadless Rule if it leaves trees smaller than 21" dbh. This is wrong.

Regarding the logging in the other units located in the Inventoried Roadless area, the FS is vague as to the size of trees that will be logged. This is insufficient to comply with NEPA and the Roadless Rule. The FS must guarantee to the public that it will log only small diameter trees.

Moreover, even if the FS could guarantee that it would only truly log small diameter trees, it still cannot meet the second prong of the Roadless Rule which requires a showing that the Project would "maintain or restore the desirable characteristics of ecosystem composition and structure."

Suggested Remedy: Ban any and all logging in roadless areas greater than 1000 acres.

Response: From 36 C.F.R. §294.10**,** The purpose of this subpart is to provide, within the context of multiple use management, lasting protection for inventoried roadless areas within the National Forest System.
The FEIS has complied with the NEPA process, 36 C.F.R. §294.10, and clearly disclosed your concerns about the size of trees to be removed from the IRAs. For details refer to ***§ 294.13(b)(1)*** in the Response to Issue 1 above. Regarding your concerns with "maintain or restore the desirable characteristics of ecosystem composition and structure"**,** refer to ***§ 294.13(b)(ii)*** in the Response to Issue 1 above.

Issue 3. (IRA) pp. 36, 37

The Myrtle Creek HFRA Project FEIS Fails to Adequately Disclose, Analyze, and Take a "Hard Look" at the Direct, Indirect, and Cumulative Impacts of Logging in Inventoried Roadless Areas in Violation of the National Environmental Policy Act.

An EIS requires site specific analysis "whenever there is an 'irretrievable commitment of resources' by a federal agency to a project

The scientific consensus is that roadless areas greater than 1000 acres in size provide some of the best remaining habitat for imperiled aquatic and terrestrial wildlife species. The Forest Service failed to specifically consider the effects that the Myrtle Creek HFRA Project would have on the undeveloped character of the IRAs proposed for logging. Nor has the FEIS analyzed the extent to which the proposed logging would maintain or improve the IRA characteristics. Specifically, the Forest Service failed to consider the effects to the "resources or features that are often present in and characterize" IRAs including: (1) High quality or undisturbed soil, water, and air; (2) Sources of public drinking water; (3) Diversity of plant and animal communities; (4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land; (5) Primitive, semi-primitive non-motorized and semi-primitive motorized classes of dispersed recreation; (6) Reference landscapes; (7) Natural appearing landscapes with high scenic quality; (8) Traditional cultural properties and sacred sites; and (9) other locally identified characteristics." 36 C.F.R. § 294.11; 66 Fed. Reg. 3244, 3272 (January 12, 2001).

Suggested Remedy: *Ban any and all logging in roadless areas greater than 1000 acres.*

Response: From the FEIS on p. 3-72, Analysis and disclosures of the anticipated effects on Roadless Areas utilized direction provided by the 2001 Roadless Rule and the 2007 Forest Service Handbook (FSH 1909.12, Chapter 70). The following attributes were analyzed:

Natural
Undeveloped
Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation
Special Features
Manageability

Current guidance is provided by the Forest Plan, the 2001 Roadless Area Conservation Rule and Forest Service Manual Interim Directive: 1920-2006-1.
The Myrtle HFRA project meets 36 C.F.R. § 294.11 with the Analysis Methodology for the Roadless Characteristics are listed in Table 4.46 in the FEIS on p. 4-90. The FEIS discloses the undeveloped Roadless characteristics and their indicators in the FEIS on pp. 2-8, 2-40, 2-41, 3-73, 3-78 to 3-80. The map in the FEIS on p. 3-81 clearly show the expanse of the both IRAs and the proposed units. The Roadless attributes or characteristics are visible using "Google" shareware. Effects of the proposed treatments as they relate to the Roadless Characteristics are described on pp. 4-90 through 4-98. Effects to the Roadless Characteristics and Required Disclosures are explained in the FEIS on pp. 4-99 through 103.

Issue 4. (IRA) p.37

The Myrtle Creek HFRA Project FEIS fails to identify the effects that project implementation will have on the potential, future wilderness allocation for the Selkirk IRA and Kootenai Peak IRA. IRAs are the precursors to wilderness areas and without sufficient analysis of the effects of logging, the Forest Service cannot ensure that the IRAs will retain characteristics that will support future wilderness allocations. Wilderness areas are inconsistent with extensive logging: wilderness must retain its "primeval character and influence"; wilderness should "preserve its natural conditions"; wilderness areas are to be "untrammeled by man"; wilderness should generally appear "to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." 16. U.S.C. § 1131(c).

Suggested Remedy: *None.*

Response: A summary of effects to the IRAs are discussed in the FEIS on pp. 2-40 and 41, and in the Response to Issue 3. Forest Plan Direction is explained in the FEIS on p. 3-73. The analysis of roadless lands in the 1987 Forest Plan EIS led to some areas being proposed for inclusion in the National Wilderness Preservation System and others being assigned non wilderness prescriptions (Forest Plan FEIS; USDA Forest Service 1987a, Appendix C). The Forest Plan direction for management of roadless areas states, "Roadless areas will be managed based on the direction and goals established for the respective management area (MA) within which they are located" (Forest Plan, p. II-4). It is important to note that MAs that allow activities in roadless areas *do not mandate that future development will occur.*

The Myrtle Creek HFRA project area includes portions of two Inventoried Roadless Areas (IRAs) – the Selkirk and Kootenai Peak IRAs (See Map in FEIS on 3-81). The Record of Decision for the Forest Plan recommended portions of four roadless areas for wilderness classification, including 26,658 acres of the Selkirk Crest (Forest Plan ROD, pg 16). Portions of the Selkirk Roadless Area not recommended for wilderness are outside the scenic Selkirk Crest and have lower wilderness attributes, and did not receive significant public support, with the exception of Long Canyon, which will be managed as roadless with no development for this planning period (Forest Plan ROD, pg 17). None of the proposed treatments for this project are located within Long Canyon.

The Selkirk Crest and contiguous roadless lands have been supported for Wilderness designation by the public for the last 20 years or more. Area boundaries included for designation have varied with each proposal. Roadless lands in this project area are generally south and east of the lands most consistently supported for Wilderness designation.

Note: The Forest Plan is currently in the process of being revised; however, proposed activities must remain compliant with the 1987 Forest Plan until a new plan is issued.

Current Forest Plan Management Area Direction follows Management Area direction (Forest Plan Chapter III; and Record of Decision, Table 1, pg 19). They are listed in the FEIS on pp. 3-74 through 76.

A roadless area is defined as an area of 5,000 acres or greater in size, or any acreage contiguous to existing wilderness. Neither the Selkirk nor Kootenai Peak IRAs are contiguous to any Wilderness areas, the nearest Wilderness areas are in Washington or Montana (http://roadless.fs.fed.us/states/id/idah.pdf).

The project area contains portions of two Inventoried Roadless Areas – Selkirk #125 and Kootenai Peak #126. The Selkirk IRA #125 is about 97,957 acres total. The Kootenai Peak IRA #126 is about 4844 acres, less than the 5000 acre required; however, it is being managed as an IRA until further notice.

It should also be noted that the current 2001 Roadless Area boundaries and Management Areas (FEIS p.3-75, 76) would change with the IPNF Forest Plan revision. Essentially, none of the units proposed with the Myrtle HFRA project would remain in an IRA. Click on the following link for a map showing the proposed changes in Management Areas and consequentially the boundary to the IRAs (http://www.fs.fed.us/kipz/maps/dp-map/ipnf/county/boundary_co_11x17.pdf). This project is also in line with the State of Idaho's Roadless Area Petition filed with the Secretary of Agriculture, reviewed (http://gov.idaho.gov/roadless_petition/IdahoPanhandleNF_Kootenai%20Rev%20091506.pdf) and recommended by the Department's Roadless Area Conservation National Advisory Committee, and accepted by the Secretary on December 22, 2006. The proposed fuels reduction areas are within roadless areas identified under the State petition as being within the General Forest Area management theme. This theme permits road construction and timber harvest after necessary environmental analysis is completed.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1. (IRA) page 2.
The FEIS fails to adequately evaluate roadless impacts and fails to comply with requirements of the Roadless Rule.

Suggested Remedy: *None*

Response: Refer to Issue 3.

Issue 2. (IRA) page 5.
We also question how fuel breaks will be maintained, and how this complies with the Roadless Rule. Will the ROD authorize ongoing activity to maintain fuel buffers into the future?

Suggested Remedy: *None*

Response: Fuel treatments are generally expected to have longevity of approximately 15 years based on natural fuels accumulations (the FEIS addresses this on page 2-15) "Removing ladder fuels from below and around the large old relic trees would lower the risk of stand-replacing crown fire in the future." Although, this would obviously be dependent on type and intensity of treatment and on what type of site it occurred. For example, the benefits of some regeneration harvests that regenerate with fire-resistant species such as larch are still effective 20 years later at slowing fire spread. Again on page 2-15 -

"For this project, periodic treatments such as thinning and underburning would be used every 15 to 20 years to develop and maintain historic values relating to…fuel loading and wildlife snags." This would be most applicable on dry-sites. The fire and fuels section also includes monitoring to address the effectiveness of treatments on page 4-70 section 4.3-D.3 Monitoring. In addition, the project file includes FVS-FFE runs on selected stands under Alternative 2 and the effects on fuels treatments on fuels and potential fire behavior into the future.

The fuels treatments are designed to maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period *§ 294.13(b)(ii)*. The methodology used to meet the criteria in the roadless rule is explained in the previous response. As mentioned previously, the fuel reduction treatments are expected to last approximately 15 years at which time, the appropriate environmental analysis will be completed.

Issue 3. (IRA) page 15.
Pursuant to both the 2001 Roadless Rule (36 CFR §294.3 Subpart B) and FSM 1925, the Myrtle Creek Project (hereafter "Project") fails to comply. According to the pertinent sections of the Roadless Rule, logging is limited to removal of "generally small diameter timber" that is needed for specified purposes "…and will maintain or improve one or more of the roadless characteristics…" Regarding this Project, the supposed purpose is "to maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects…within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period," 36 CFR § 294.13(b). The Project fails to comply with these limitations, at a minimum, because: a) regeneration logging is proposed, which would remove the majority of trees (i.e. it would not be limited to "generally small diameter" trees);

Suggested Remedy: *None*

Response: Just because a unit will be regenerated does not mean big trees will be cut; there are just hundreds of smaller trees per acre growing in the area. Refer to the pictures, captions, and graphs that explain the forest composition and structure in the FEIS on pp.3-56 through 63 and on p.4-97. The units are spatially arranged in the project area in an effort to buffer the watercourses from the after effects of unwanted fire such as the impending post-fire sediment risk. The tree diameters to be cut are small diameter in the context of North Idaho Forests (see tables in Response to Issue xx).

Issue 3 (IRA) page 15.
b) roadless characteristics will not be maintained or restored (in either dry or moist forest types);

Suggested Remedy: *None*

Response: Fuel treatments are generally expected to have longevity of approximately 15 years based on natural fuels accumulations (the FEIS addresses this on page 2-15) "Removing ladder fuels from below and around the large old relic trees would lower the risk of stand-replacing crown fire in the future." Although, this would obviously be dependent on type and intensity of treatment and on what type of site it occurred. For example, the benefits of some regeneration harvests that regenerate with fire-resistant species such as larch are still effective 20 years later at slowing fire spread. Again on page 2-15 - "For this project, periodic treatments such as thinning and underburning would be used every 15 to 20 years to develop and maintain historic values relating to…fuel loading and wildlife snags." This would be most applicable on dry-sites. The fire and fuels section also includes monitoring to address the effectiveness of treatments on page 4-70 section 4.3-D.3 Monitoring. In addition, the project file includes FVS-FFE runs on selected stands under Alternative 2 and the effects on fuels treatments on fuels and potential fire behavior into the future.

The methodology used to meet the criteria in the roadless rule is explained above under the response for *§ 294.13(b)(ii).*

Issue 4 (IRA) page 15.
c) the IPNF has failed to demonstrate that forest conditions are outside the historic range of variability within both moist and dry forest types.

Suggested Remedy: *None*

Response: All of the proposed units are in areas of low terrestrial integrity (Fig3.3) and have missed fire cycles (Fig3.1). Refer to the text, pictures, captions, and graphs that explain the terrestrial integrity, forest composition, and structure and how the current conditions have changed from historical conditions, see FEIS on pp.3-44 through 63.

Issue 5 (IRA) page 15.
The FEIS fails to specifically identify how it complies with the above referenced regulations, and the analysis contained with the FEIS does not support contentions that it does comply. As a result of these, and other shortcomings, the Project violates the 2001 Roadless Rule (36 CFR § 294 Subpart A), and, furthermore would require the approval of the Chief of the Forest Service as per FSM1925.04a.

Where regeneration logging (shelterwood and group selection) is proposed within roadless land, totaling 1,097 acres, no discussion is provided as to the size of trees that will be cut or retained. According to project file documents, tree diameters for various species, which are likely to be cut, exceed 20". By any definition, in North Idaho forests, these are not small trees.

Suggested Remedy: *None*

Response: The FEIS met the requirements of the 2001 Roadless Rule. From the FEIS 4-97:

4.6-G Roadless Area Conservation Rule Consistency
Alternative 2 would be consistent with the January 2001Roadless Rule, incorporated at 36 CFR § 294.13(1). The Proposed Action meets the following exception:

§294.13 Prohibition on timber cutting, sale, or removal in inventoried roadless areas, subsection (b)(1)(ii)

To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;

The Responsible Official has made the following determinations:

- The trees to be removed in this project consist of generally small-diameter timber.

The irregular shelterwood prescriptions are in stands generally dominated by trees smaller than 10 inches DBH. The large diameter western larch, white pine, and Douglas-fir (in addition to large-diameter trees of other species) would be retained in the overstory and no future overstory removals would be scheduled.
The commercial thinning prescriptions would focus on retention of the biggest and best trees available in the stand. The average size of the trees removed would typically be less than 9 inches DBH.

- The treatments are needed to maintain or restore desirable characteristics of ecosystem composition and structure to reduce the risk of uncharacteristic wildfire effects.

The fuels reduction treatments will trend the treated areas toward stand conditions that more closely resemble their natural or historic conditions, which in turn trends the treated areas toward their historic fire regimes and toward a lower, more desirable and sustainable Fire Regime Condition Class. The treated stands will trend toward their historic conditions of less fuel buildup (particularly ladder fuels), stands that are less dense (resulting in more open tree canopies), and stand composition and structure that is more sustainable, adaptable and resilient to fire. After the slash is burned in the treated areas, the predicted fire behavior (such as lower flame lengths, slower rates of spread) and crown fire hazard will be reduced. Where treated, there will be a reduced chance of fire causing uncharacteristic and undesired mortality in the stands, and an increased likelihood that firefighters will be able to safely suppress the fire.

Alternative 1 (No Action) and Alternative 5 do not include activities in Inventoried Roadless Areas, therefore the Roadless Rule would not apply to either of these alternatives.
Also, refer to the Response to Issue 1.

Issue 5. (IRA) page 16
The FEIS also maintains that logging in roadless areas is not an irreversible commitment of resources….must include:
1. Include site-specific statements of the environmental consequences that a non-wilderness management would have on the roadless area;
2. Discuss mitigation measures to avoid or minimize the impact or loss of wilderness characteristics; and
3. Develop and analyze an adequate range of wilderness and non-wilderness alternatives.

Suggested Remedy: *None*

Response: No new road construction is proposed with this project so there will be no permanent changes in the Roadless areas and the tree are a renewable resource.Refer to the FEIS on 4-99 and 100 where the short term and long term effects are discussed.

4.7-B Probable Adverse Environmental Effects Which Cannot Be Avoided

Implementation of any alternative (Alternative 1, 2 or 5) would inevitably result in some adverse environmental effects. The severity of the effects of the action alternatives can be minimized by adhering to the features of the alternatives, such as Best Management Practices. If management activities occur, however, some effects cannot be avoided. Even the No Action Alternative has effects.

a. Scenic Resources, Roadless Areas and Recreation

The fuels reductions treatments would add a variety of line, form, color and texture to the landscape. Proposed activities would have a short-term adverse affect on specific roadless area characteristics and recreation activities while activities are occurring and until the in-growth of vegetation begins to mask the evidence of management activities. Removing the understory and intermediate size trees would create stumps, which could remain on the landscape for five to 20 years or more depending on the rate of decomposition, burning consumption during the underburning, and the tree species. This evidence of active management could be perceived as an adverse effect to the portion of the roadless areas treated with the Myrtle HFRA project.

b. Vegetation

The capability of the land to produce timber, high quality water, and forage would not be impaired by any of the action alternatives. Silvicultural treatments would reduce competition and improve growth of individual trees, and maintain the health and vigor of timber stands, thus enhancing long-term productivity of the area. In the short-term, harvesting stands at high risk of mortality would utilize commercially valuable wood products that would otherwise not be used as forest products. Reforestation would contribute to maintaining these lands in a productive state.

Silvicultural treatments that trend toward desired species composition and stocking levels, planting of genetically improved trees, management of stocking levels to reduce competition and improve vigor of trees, and intermediate treatments to maintain the health and vigor of stands are all means of trending toward and maintaining sustainable conditions. Thus, managed stands produce a greater rate of growth over time than unmanaged stands – maintaining the long-term yield of forest stands.
In the short-term, harvesting stands that are at a high risk of mortality captures the economic value that would otherwise be lost. Reforestation (natural or planted) keeps the land back in a productive growing condition.

Silvicultural and fuels reduction treatments can affect the levels of organic matter within an activity area, which could reduce long-term site productivity. These management activities include measures designed to maintain varying levels of organic matter and to maintain or improve soil characteristics that affect site productivity (see discussion of the Soil Resource throughout the FEIS). Reforestation of treatment areas could change plant succession, stand development, and species composition.

I. WILDLIFE

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (page 39) *The fact that grizzlies are known to inhabit the Myrtle BMU heightens the need to avoid impacts on grizzly bear habitat and security that will cause harm. This should have been a major consideration during the planning of the Myrtle HFRA project, but clearly was not.*

Objectors' suggested remedy: *Unclear*

Forest Service response: The project area is within the designated Selkirk Recovery Zone, therefore it is managed in cooperation with recommendations of the US Fish & Wildlife Service (USFWS) and the Interagency Grizzly Bear Committee (IGBC) regardless of whether or not grizzly bear presence has been documented. The fact that we are in a recovery area does not preclude management activities, but requires additional procedures such as conducting a BA to determine effects and consulting with USFWS if there are effects.

Potential effects to grizzly bears have been under consideration for the Myrtle HFRA project since the initial planning phases of the project. Grizzly bear (and other T&E species) concerns were discussed at the collaborative group meeting on November 30, 2004 (project file documents 2004 1130_kvri_myrtle_group_notes.pdf, Mhfra_wild_PPT.pdf). Potential impacts to core habitat factored into the modification of Proposal 2 (now Alternative 3) to the present proposed action (Alternative 2) (FEIS pp. 2-9 – 2-10; project file wild_const.pdf). After several informal discussions with USFWS, formal consultation was initiated on December 12, 2006 after the Biological Assessment determined the project was likely to adversely affect grizzly bears (project file MHFRA_BA.pdf). On July 25, 2007, the IPNF reinitiated consultation for grizzly bear on the Myrtle HFRA

proposed action with activities in units B1, B3, B6 and G9 deferred. It was determined that the proposed action, with units deferred, may affect, but was not likely to adversely affect grizzly bear.

Grizzly bear habitat effectiveness (Open and Total motorized route densities, core habitat, and 1987 IPNF Forest Plan "security") has factored prominently into the timing (both seasonally and across multiple years) of timber harvest and related activities for the project (FEIS p. 2-32; project file documents MHFRA_BA.pdf pp. 12-15, myrtle_BA_supp.pdf, Myrt_BA3.pdf, myrtle_BO.pdf pp. 21-25, myrt_sec.pdf, MHFRA_BA_amend.pdf).

Issue 2. (page 39) *The proposed action (Alternative 2) in the Myrtle HFRA FEIS is likely to adversely affect grizzly bears.*

Objectors' suggested remedy: *None*

Forest Service response: On July 25, 2007, the IPNF reinitiated consultation for grizzly bear on the Myrtle HFRA proposed action with activities in units B1, B3, B6 and G9 deferred. It was determined that the proposed action, with units deferred, may affect, but was not likely to adversely affect grizzly bear. (MHFRA_BA_amend.pdf).

Issue 3. (page 40) *The Myrtle W-BA relies on standards approved in the Record of Decision (ROD) for the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones for the Kootenai, Idaho Panhandle and Lolo National Forests (Access Amendments) to determine the impacts of the proposed action on grizzly bears. However, both the ROD and FEIS for the Access Amendments have been set aside by federal court order.*

Objectors' suggested remedy: *None*

Forest Service response: Because the ROD and FEIS for the Access Amendments have been set aside by a Federal court, the current standards for grizzly bear management on the IPNF include the 1987 Forest Plan Wildlife Standard 4c ("strive for at least 70 square miles of security") and Terms and Conditions from the 2001 Biological Opinion for the Continued Implementation of the Idaho Panhandle National Forests Land and Resource Management Plan. Specifically, the 2001 BO directs that BMUs achieve a minimum of 55% core habitat and a maximum of 33% and 26% OMRD and TMRD, respectively. Additionally, until all BMUs achieve at least 55% core habitat, activities cannot result in a decrease in existing core. Also, activities cannot raise road densities in individual BMUs if the affected BMU does not meet the 33% and 26% standards.

The Myrtle BMU currently meets the habitat effectiveness recommendations from the 2001 BO that were established through research in the Selkirk and Cabinet-Yaak recovery zones (Wakkinen and Kasworm 1997), and will continue to during and after project implementation (project file document MHFRA_BA_amend.pdf). The BMU currently contains 59% core habitat, OMRD = 31%, and TMRD = 20%. There will be no change to core or TMRD as a result of this proposal, and activities will be regulated so OMRD remains at or below 33% (project file document MHFRA_BA.pdf pp. 12-13). Compliance with Forest Plan Wildlife Standard 4c is clearly demonstrated in project file document myrt_sec.pdf.

Issue 4. (page 41) *Until the Forest Service produces a revision of the FEIS for the Access Amendments that is legally sufficient, the stipulations in the 2001 Settlement Agreement apply to proposed actions that may affect grizzly bears, and those that are likely adversely affect grizzly bears are clearly prohibited by the Court-ordered Settlement Agreement.*

Objectors' suggested remedy: *Do not undertake activities that are likely to adversely affect grizzly bear.*

Forest Service response*:* On July 25, 2007, the IPNF reinitiated consultation for grizzly bear on the Myrtle HFRA proposed action with activities in units B1, B3, B6 and G9 deferred. It was determined that the proposed action, with units deferred, may affect, but was not likely to adversely affect grizzly bear. Therefore, the terms of the 2001 settlement regarding adverse effects on grizzly bear do not apply to this project.

Issue 5. (page 41) *Implementation of Alternative 2 would Violate Section 7(a)(1) of the Endangered Species Act.*

In spite of the exemption from section 9 of the ESA bestowed by the FWS for the proposed action, the Forest Service will be in violation of section 7(a)(1) of the ESA if a decision to go forward Alternative 2 is issued. Section 7(a)(1) requires all federal agencies to carry out "programs for the conservation of endangered species and threatened species."

Objectors' suggested remedy: *None*

Forest Service response: Implementation of Alternative 2 would not violate Section 7 (a)(1) of ESA. Section 7 (a)(1) does not provide any mechanism for applying its very broad goals to particular circumstances involving particular species, and it does not mandate any particular actions, as opposed to 7(a)(2) with its specific consultation requirements. Sec. 7(a)(2) directs Federal agencies to"insure that any action authorized, funded, or carried out" by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of critical habitat. Demonstrated compliance with Sec. 7(a)(2) can be found in the project file (MHFRA_BA.pdf, myrtle_BA_supp.pdf, Myrt_BA3.pdf, myrtle_BO.pdf, MHFRA_BA_amend.pdf).

Issue 6. (page 42) *The Proposed Mitigation would not Prevent Adverse Impacts to Grizzly Bears.*

Objectors' suggested remedy: *None*

Forest Service response: Since activities in units B1, B3, B6 and G9 have been deferred, no adverse affects are anticipated.

Issue 7. (page 43) The Forest Service failed to Consider Impacts on Non-Core Grizzly Bear Habitat

Objectors' suggested remedy: *None*

Forest Service response: Not true. The wildlife BA discusses road maintenance, use of restricted roads as haul routes, timber harvest (felling, skidding, loading and hauling), post-sale (slash disposal) activities, and helicopter use outside core habitat in detail (project file documents MHFRA_BA.pdf pp. 11-14, myrtle_BA_supp.pdf, MHFRA_BA_amend.pdf). In addition, there is extensive discussion in the project file (myrt_sec.pdf) regarding the effects of various proposed activities (both within and outside core habitat) on grizzly bear habitat effectiveness defined by the 1987 Forest Plan ("security" habitat).

Issue 8. (page 43) *The core area adversely impacted by helicopter logging should be deducted from core in the BMU and the loss compensated for by providing/establishing alternate core.*
There is no scientific basis for the conclusion that the impacts from helicopter logging in the two core blocks will not result in long-term displacement from those areas.

Objectors' suggested remedy: *None*

Forest Service response: Helicopter logging in grizzly bear core habitat (units B1, B3, B6 and G9) has been deferred.

Issue 9. (page 52) *The FS through the FEIS concedes it will adversely impact numerous species including: the black-backed woodpecker (FEIS B-23 – B-24), the flammulated owl (B-26 – B-27), the Northern Goshawk, (FEIS B-31), the fisher (FEIS B-35), the pileated woodpecker (FEIS B-35 – B-36). For all of these species, the FS makes the unsubstantiated statement that this Project's impact won't "likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species."*

Objectors' suggested remedy: *None*

Forest Service response: The FEIS acknowledges the potential for short-term (during implementation) impacts to all these species, but offers justification for the argument that these impacts are offset by long-term habitat improvements (flammulated owl), are inconsequential with regards to total available habitat (black-backed woodpecker, Northern goshawk and fisher) or both (pileated woodpecker).

The proposal would potentially impact approximately 76 acres of currently suitable flammulated owl nesting habitat, which is expected to remain in suitable condition following treatment. Elsewhere, as many as 860 acres of currently unsuitable habitat will be trended towards suitable condition (570 acres of which contain a suitable foundation of large-diameter (>20" dbh) ponderosa pine, larch and Douglas-fir stems but are excessively congested in the understory; and 290 acres of which lack large stems in the overstory, but over time would grow into suitable habitat (fewer, larger stems) through thinning of suppressed stems in the primary canopy layer. An additional 139 acres of currently unsuitable habitat will be regeneration harvested. Since these stands are mainly comprised of lodgepole pine, they are not expected to reach suitable condition absent a stand-

replacing event (altering species composition to replace lodgepole pine with long-lived seral species capable of achieving large stem diameter). Samson (2005) estimates that the IPNF contains sufficient habitat for about 426 flammulated owl pairs. Activity within 76 acres represents potential disturbance to less than one percent of the available habitat on the Forest.

While approximately 213 acres of suitable Northern goshawk nesting habitat would be converted to unsuitable condition by this proposal, the project area would continue to meet the Reynolds et al. (1992) recommendation of maintaining at least three suitable nesting stands >30 acres in size per 5,000-6,000 acre home range (FEIS pp. B-30 – B-31). Samson (2005) concluded that there is no evidence that Northern goshawk is declining in numbers in the western United States, have well-distributed and abundant habitat on today's landscape, and are considered globally secure, abundant and widespread (www.natureserve.org). Northern goshawk habitat estimates on IPNF-administered lands indicate the Forest can currently support a minimum of 166 breeding pairs, when nesting, post-fledging family area, and non-overlapping foraging habitat are collectively considered (Samson 2005). In addition, the comparison of relative forest composition and structure in 1938-1942 to current in the characteristics important to northern goshawk show a substantial increase in acres of mature (saw timber) Douglas-fir trees on the IPNF from1.4% to 11.9%. For these reasons, we do not believe that reduction of up to 213 acres of suitable nesting habitat is likely to contribute to a trend toward Federal listing or cause a loss of viability to Northern goshawk.

The proposal would reduce currently suitable fisher habitat by approximately 121 acres, and would cause a 1% reduction of capable habitat in a mature structural state (FEIS p. B-33). The project area would remain a "moderate quality" subdrainage according to the criteria established by IDF&G (1995) and Heinemeyer and Jones (1994), and is expected to achieve "high quality" subdrainage criteria within the next 10-15 years in the absence of other activities that alter vegetation structure. District vegetation data clearly show that the total of forested acres in mature and old-growth condition in the project area are within the historic range of variation for these structural types (FEIS p. 3-55, Fig. 3.14), and that the shade tolerant tree species (presumably providing better habitat for fishers than open-canopied stands dominated by shade-intolerant species) composition has increased significantly from the time period prior to fire suppression efforts (FEIS p.3-57, Fig. 3.16). In addition, understory congestion in many dry-site stands is potentially providing suitable fisher habitat in areas that did not prior to effective fire suppression (DEIS p. B-33). Riparian areas (potentially suitable habitat and important travel corridors) will remain intact through application of INFISH buffers. In the last 50 years, the District has had an annual regeneration rate of about 0.2% (FEIS p. 3-57). Since fisher are already at extremely low densities in north Idaho, it is unlikely that suitable habitat is limiting in the region. Given this information, it is doubtful that reduction of 1.4% of suitable habitat (0.7% of capable habitat) in the project area will result in a loss of viability of this species.

Black-backed woodpecker habitat could be reduced by as many as 1,558 acres under Alternative 2 (FEIS p. B-23). While this represents nearly 10% of the potential nesting habitat in the project area, relatively few of these acres are considered "source" habitats (old forests, young forest stages of lodgepole pine, and burned forests and large scale insect infestations) (Wisdom et al. 2000). None of the approximately 1,500 acres of recent high-severity burn in the project area will be impacted. District-wide, aerial tree mortality surveys indicate that annual mortality from new insect infestations has gone from approximately 4,000 acres/year from 1990-1998 to almost 7,000 acres/year from 1999-2000 (project file document aerial survey data 90-00.pdf). As a result, levels of snags 10- 20" dbh District-wide average nearly 10 per acre (project file document USDA_dCER.pdf). Samson (2005) calculated that while the IPNF could potentially only support 18-31 pairs of nesting black-backed woodpeckers in recent post-fire habitats, the Forest could support nearly 1,000 pairs in insect infested habitats. Thus, even if the entire 1,558 acres reduced by the proposed action were insect-infested (they are not), they would only represent <1.3% of this habitat component Forest-wide. Since no recent post-fire habitat will be affected, medium-sized (10-20") snags are abundant on the District, and considerably less than 2% of the potential nesting habitat on the IPNF would be impacted, the proposed action is unlikely to result in a loss of viability of this species or trend it toward Federal listing.

The project could potentially reduce pileated woodpecker nesting habitat by 7% in the project area (FEIS p. B-32). None of the nine hypothetical pileated woodpecker home ranges would have forest structure reduced below the recommendations in USDA (1990) under any alternative. Snags and snag replacements would be retained in treatment units where available at levels recommended by the Region 1 Snag Management Protocol. Treatments are designed to establish or maintain long-lived seral species such as white pine, ponderosa pine, and western larch, likely improving pileated woodpecker nesting habitat within the project area in the long term by increasing high quality, large-diameter snags. No treatments are proposed that would reduce old growth structure or integrity. Samson (2005) states that both nest site habitat and winter foraging habitat are abundant and well distributed across the Northern Region by Ecological Province and Forest. In fact, the IPNF contains the most nesting and winter foraging habitat of any of the Northern Region forests, with winter habitat adequate to support 7,291 pileated woodpecker pairs. The regeneration of 255 acres of potential nesting represents less than 0.2% of the available nesting habitat on the IPNF. Given the abundance of pileated woodpecker habitat on the Forest, the insignificant amount of habitat that would be lost through treatment, and the fact that treatments are designed to foster larger stem diameters of seral species pileated woodpeckers prefer for nesting, the proposed action would not result in a loss of viability of this species or trend it toward Federal listing.

Issue 10. (page 53) *The Samson 2005 study is not peer-reviewed to validate its purported claims that species such as black-backed woodpeckers and northern goshawks remain viable after a century of major habitat alterations occurring post-European settlement.*

Objectors assert that the FS is not utilizing the best-available science when relying upon the Samson 2005 study.

Objectors' suggested remedy: *None*

Forest Service response: The analysis and decision processes for this project are based on the consideration of the best available science. The manner in which best available science is addressed can be found throughout the disclosure of rationale found within the DEIS, FEIS, Response to Comments, Biological Assessments and the project file.

Samson (2005) is a broad level analysis designed to aid in placing a species in context at the larger population level and addressing NFMA requirements, and was based on numerous peer-reviewed studies. The objectors have cited no published studies (peer-reviewed or otherwise) that directly or specifically dispute the findings in Samson (2005). As a result, the USFS considers this paper the "best available science" with regard to Region- and Forest-wide viability analyses of Northern goshawk, black-backed woodpecker, flammulated owl and pileated woodpecker.

Issue 11. (page 53) *In support of its management maintaining or improving flammulated owl habitat, the FS relies upon a 2006 Dawson Ridge study, which consisted of five 1/5 acre square plots (18 acres in size).*

Objectors' suggested remedy: *None*

Forest Service response*:* This statement incorrectly implies that only 18 acres of the Dawson Ridge area were surveyed for flammulated owls in 2006. In fact, the five 1/5 acre square plots refer to the vegetation sampling conducted to verify habitat characteristics and correlate silvicultural prescriptions with suggested habitat criteria (project file document meadow_dawson_flam_hab.pdf). The 2006 flammulated owl survey itself covered nearly 200 acres of the Dawson Ridge area: assuming the effective carrying distance of recorded calls and owl responses to be 500', each survey point would cover approximately 18 acres (circle 500' in radius) x 11 survey points on the route (project file document dawson_2006_flow_survey.pdf).

Issue 12. (page 58) *The FS fails to provide population surveys that support its claim that the MIS and Sensitive Species will inhabit these logged old-growth areas.*

Objectors' suggested remedy: *None*

Forest Service response: See response to Issue 17 regarding use of habitat as a proxy for population data.

The Forest Service cannot assure that flammulated owls will nest in mechanically treated dry site old growth stands, or that large woody debris near riparian areas will be utilized by fisher as maternal dens. We can only provide habitat conditions similar to what are documented as a species preference in published literature. The "guild" of Region 1 Sensitive wildlife species that rely on open-grown structure of large-stemmed dry forest conifer species (ponderosa pine/Douglas-fir/grand fir) – including flammulated owl, pygmy nuthatch and fringed myotis – are the species most sensitive to loss of the type of dry forest structure that exisited before fire exclusion. Flammulated owls breed in open, mature to old growth ponderosa pine/Douglas-fir forests in the northern and central Rocky Mountains (IPF 2000) (MPF 2000) (Reynolds & Linkhart 1992). The old growth stands in question, with the exception of a few small areas, do not currently provide these conditions. While large snags may be present, overstory canopy cover generally exceeds what this species prefers for nesting and foraging habitat due to high densities of stems in the secondary and/or tertiary canopy layers (4"-16" dbh).

The FEIS [p. 3-59] acknowledges that this dense understory is due, in large part, to decades of fire exclusion. However, as discussed in the FEIS (p. 4-72), the buildup of fuels in these stands dictates that wildfire at this point is much more likely to be stand-replacing crown fire (destroying the old growth character of the stand) than the cooler underburns that would have contributed to a more open understory prior to effective fire suppression. While there is no certainty that these stands will be affected by stand-replacing fire, the ongoing drought conditions and buildup of both dead (limbs, needles, etc.) and green

(dense understory) fuels result in a high probability that wildfire in these stands would cause high mortality among the largest (old growth) trees.

In short, most acres of dry site old growth in the project area are currently unsuitable flammulated owl nesting and foraging habitat due to excessive stem density in the understory, and continue to trend away from suitability (FEIS pp. B-10, B-26 – B-27) No flammulated owl presence was documented during surveys of several of the proposed dry-site treatment areas (project file document myrtle_snow_flow_surveys.pdf). The risk of wildfire, and the likelihood that this fire would be stand-replacing in these stands, increases yearly. Mechanical treatment represents a relatively low level of risk to continued viability of this species (due to disturbance during implementation and some snag loss), but would result in increased habitat quality and quantity over time. The proposed action meets the stated purpose and need to "maintain and improve wildlife habitat" based on the increased number of acres that will contain structural conditions preferred by flammulated owls in treated vs. untreated stands. Without management intervention, these stands are very likely to remain in unsuitable condition for flammulated owls until a stand-replacing event sets the development back at least 150 years.

The Forest Service does not have extensive documentation of consistent utilization of treated dry-site stands by associated wildlife species since this type of treatment reflects a relatively recent management direction, and the dynamics of forest development move slowly so that trends may take decades to become apparent. However, monitoring has shown one instance (project file documents meadow_dawson_flam_hab.pdf, dawson_2006_flow_survey.pdf) where a flammulated owl was documented at a site both before and after mechanical treatment. In addition, Howie and Ritcey report flammulated owls nesting in previously logged stands of Douglas-fir, and Wright et al. (1997) state that "The evidence is clear that Flammulated Owls occupy, and sometimes nest in, selectively logged stands."

In its Idaho Bird Conservation Plan, Idaho Partners in Flight identifies dry, open-grown stands of ponderosa pine/Douglas-fir/grand fir as a "Priority Habitat" in the state, and states that these types are "poorly represented" on the landscape today (IPF 2000 p.65). The Conservation Plan goes on to state that "Although fire exclusion, grazing, and timber harvest, alone or in combination, have resulted in and continue to cause the loss of the ol-growth ponderosa pine forests, the most immediate threats to the future viability of these forests are stand-replacing fire occurences and within-stand dynamics." (IPF 2000 p. 68). The Plan recommends "restoration should primarily consist of reducing the density of trees in many stands by removing small trees, and reintroducing fire where possible." Similarly, the Montana Partners in Flight Flammulated Owl Bird Conservation Plan states that "Management geared toward the restoration of pre-European settlement habitat structure and stand distribution is an excellent prescription for Flammulated Owls based on our knowledge to date." (MPF 2000 p. 3). The dry-site old growth treatments proposed by the Myrtle HFRA FEIS are consistent with recommendations of landbird conservation strategies for Idaho and neighboring Montana.

Issue 13. (page 59) *The FS is assisting the decline of the black-backed woodpecker, and Management Indicator Species (MIS). This is illegal.*

The FS has yet to consider the viability of the black-backed woodpecker in the context of this landscape scale.

The FS has yet to design a consistent, workable, scientifically defensible strategy to ensure viable populations of the black-backed woodpeckers. The cumulative impacts of the IPNF's ongoing fire suppression policy are also not adequately considered.

Objectors' suggested remedy: *None*

Forest Service response: These comments repeat comments made on the DEIS and subsequently addressed in the FEIS (comments F.8-E, F.8-F, and F.8-G). To summarize: Black-backed woodpeckers are nearly restricted to mixed or high intensity fires (Hutto 1995). These burned areas are considered the highest value to black-backed woodpeckers. The Myrtle Project is not a fire salvage project. Therefore, this project would not affect primary or high value black-backed woodpecker habitat.

The USFS has conducted a viability analysis for black-backed woodpecker across the Northern Region (Samson, 2005). Samson's analysis concluded that short-term viability of the black-backed woodpecker in the Northern Region is not an issue because:

- No scientific evidence exists that the black-backed woodpecker is decreasing in numbers.
- Increases in the extent and connectivity of forested habitat have occurred since European settlement.
- Increases in amounts of small and mid-size trees have increased since European settlement.
- Well-distributed and abundant black-backed woodpecker habitat exists on today's landscape.

- Level of salvage timber harvest or overall timber harvest of forested landscapes in the Northern Region is insignificant.

The Myrtle HFRA project is not the appropriate planning level for developing a conservation strategy for the black-backed woodpecker, or addressing the agency's fire suppression policies. Project analysis determined that while portions of black-backed woodpecker source habitat have been affected by past, present and reasonably foreseeable actions, sufficient habitat remains within the analysis area (including the 2003 Myrtle Creek Fire burned area) to continue incidental or minor use by black-backed woodpeckers (FEIS Appendix B pp. B-22 – B-25). The changes in species composition from historical vegetation patterns have increased the incidence of insect and disease , and Douglas-fir beetle and fir engraver activity has recently been very high. These conditions historically have not been known to occur over large landscapes in the Idaho Panhandle National Forests. Consequently, insects and diseases will continue to exert their influence on the treated and untreated areas within the Myrtle Creek drainage, providing conditions for both nesting and foraging. It is important to note that while regeneration cutting would open the forest canopy to provide growing space for natural or planted trees, it would retain both live and dead trees in an irregular spacing for sustained foraging opportunities.

Issue 14. (page 59) *The FEIS and Project files fail to provide reasons for not analyzing impacts of the Project on MIS and Sensitive species. This is illegal.*

Objectors' suggested remedy: *None*

Forest Service response*:* This comment on the DEIS was addressed in the FEIS response to comment F.8-I. The DEIS (Appendix B p. 2) and FEIS (Appendix B pp. B-2 – B-3) disclose a screening process used to determine whether or not a species should be analyzed. A number of Threatened, Endangered or Region 1 Sensitive Species (TES) and IPNF Management Indicator Species (MIS) were presumed to not be present in the action area, would be affected at a level that does not increase risk to the species, or effects on the species can be adequately mitigated by altering the design of the project. Documentation and rationale for lack of further analysis can be found in the project file (X_species.doc).

Issue 15. (page 60) *The flammulated, boreal owl and the great gray owl are species of concern that are sensitive to logging and other management activities. The IPNF provides inadequate management strategies to insure their viability.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-M As stated in the FEIS: "The boreal owl inhabits higher elevation spruce-fir forests, which would not be impacted by project activities. Regarding the great gray owl, The National Forest Management Act of 1976 (NFMA) directs Forests to select management indicator species (MIS) for emphasis in planning, and which are monitored in order to assess the effects of management activities on their populations and populations of other species with similar habitat needs which they may represent (FSM 2620.5). The goshawk, discussed in the EA, would represent the effects of management activities on great gray owls because they are found in coniferous forests, forage in relatively open stand conditions, and are known to nest in abandoned goshawk nests (Clark et al. 1989).

Boreal and great gray owl are not identified as Sensitive or MIS on the IPNF. Flammulated owls are discussed in detail in the DEIS and FEIS (Appendix B). Since there would be no loss of currently suitable habitat (merely a short-term disturbance during implementation) and as many as 636 acres of currently unsuitable habitat would be trended towards suitable condition, it was determined that this project would not likely contribute to a trend toward listing or cause a loss of viability to the species."

Issue 16. (page 60) *The FEIS does not analyze the existing condition of the proposed cutting units or the effect of the project on these habitat components or their distribution throughout existing flammulated owl habitat.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-L. Existing condition of, and project effects on, flammulated owl habitat are discussed in detail in the DEIS Appendix B pp. 15, 37-38 and FEIS Appendix B pp. B-9 – B-10, B-25 – B-29.

Issue 17. (page 60) *The FS does not have adequate forestwide population or population trend data on the flammulated owl or its habitat.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-M. As stated in the FEIS: "The District has in the past - and will continue to - survey suitable habitat near activity areas in the Myrtle Creek watershed for flammulated owl occupancy. However, these surveys merely document presence, rather than abundance. Attempting to estimate population numbers and trends would be prohibitively expensive in that it would require intensive surveys over large areas for a number of years. Instead, the IPNF uses habitat as a proxy for population data on featured species. The Ninth Circuit Court has held that quantitative population data is not required by 36 CFR 219.19, and clearly sanctions the use of habitat analysis for those species for which population data could not be obtained.

As discussed in the DEIS and FEIS Appendix B, it is possible that management activities could displace owls from portions of the project area (Appendix B, p. 38, FEIS Appendix B). However, the 76 acres of "suitable" habitat include only small areas where habitat conditions favor flammulated owl nesting, interspersed with larger areas of unsuitable habitat (due to high densities of smaller stems in the understory). Treatment would result in a temporary disturbance to resident animals that may be present during implementation, and subsequent underburning may leave shrub and forb understory too depauperate to provide preferred foraging habitat in the short term. However, within two to five years the understory will have recovered sufficiently to provide habitat for the arthropod species flammulated owls rely upon for foraging."

Issue 18. (page 62) *The FEIS does not adequately consider cumulative effects on upland habitat for boreal toads.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-P, which states: "The primary risk factor for toads is loss of breeding habitat. Breeding habitat is associated with standing water bodies (e.g. lakes, ponds) and slow-moving streams and backwater channels (Maxell, 2000). Stream channels within the Myrtle HFRA project area, especially those associated with activities, are generally high-gradient, narrow channels. Consequently, breeding habitat is severely limited. Therefore, the Myrtle HFRA project is not expected to have any meaningful impacts to the boreal toad. This explanation can be found in the Project File (X_species.doc). Due to the lack of direct or indirect effects, there would be no cumulative effects."

Issue 19. (page 62) *The preference for large diameter of nesting trees for the pileated woodpecker is notably absent from the FEIS. The IPNF provides inadequate commitment to leaving specific numbers and sizes of largest trees favored by this MIS.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-Q, which states: "The DEIS appropriately acknowledges that the pileated woodpecker has specific nesting requirements, specifically large trees…with nest cavities usually located more than 30 feet above the ground (DEIS Appendix B, p. 12; FEIS Appendix B). Issue indicators used to measure effects on the pileated woodpecker are changes in nesting habitat, including quality and abundance of large diameter trees and snags (DEIS Appendix B, p. 14; FEIS Appendix B). In addition, wildlife design features (DEIS Ch. 2, pp. 22-23; FEIS Chapter 2) direct that snag and defective tree retention practices focus on the largest diameter size class represented in the stand with specific numbers and sizes. In addition, harvest activities would focus on the retention of desired tree species such as ponderosa pine (DEIS Ch. 2, p. 8; FEIS Chapter 2)."

Issue 20. (page 63) *In order to meet the requirements of the FS/USFWS Conservation Agreement for Canada lynx, the FS agreed to insure that all project activities are consistent with the Lynx Conservation Assessment and Strategy (LCAS), and that programmatic Standards of the LCAS are met. The FEIS does not adequately demonstrate consistency.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-R, which states: "Project affects to Canada lynx habitat components, and consistency with LCAS guidelines, are clearly disclosed in the DEIS Appendix B (pp. 23-24, 26; FEIS Appendix B). Project activities would not decrease suitable denning habitat below 10% of lynx habitat within either the Myrtle-Cascade or Snow Canada Lynx Analysis Units (LAUs), would not increase unsuitable habitat above 30% of lynx habitat in each LAU, and would not increase unsuitable habitat by more than 15% of lynx habitat in either LAU within a ten-year period."

Issue 21. (Appendix E) *There is considerable scientific controversy over the adequacies of the IPNF's snag standards and guidelines, recognized by the IPNF itself. The Northern Region Snag protocol has not been subject to independent scientific peer review and validation from post-implementation monitoring. Nor has it been the subject of a contextually proper NEPA and NFMA review as a forest plan amendment.*

Objectors' suggested remedy: *None*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-R, which states: "The Northern Region Snag Protocol (USFS 2000) is not a Forest Plan Amendment, but recommendations designed to improve snag retention in treated areas. The IPNF has chosen to follow recommendations contained in the Northern Region Snag Management Protocol regarding snag retention standards and recruitment strategies where such opportunities exist. While current conditions may not meet these objectives due to existing stand structure (relatively young, healthy stands with low occurrence of quality snags), long-term management objectives are intended to manage snag habitat to exceed Forest Plan guidelines. Wildlife tree retention guidelines rely heavily on recommendations provided by Bull et al. (1997), which states that published data suggests that populations of cavity nesters were viable in stands of ponderosa pine and mixed-conifer forests that contained about four snags per acre and a large component of old growth.

The DEIS and FEIS acknowledges the loss of some snags from logging operations. However, design features are provided to minimize these losses (see FEIS Chapter 2 p. 2-30 – 2-31). Snag retention objectives are accounted for on a treatment level scale, not managed on a per acre basis. It would be extremely difficult to predict how much snag loss is anticipated, especially when the natural density and distribution varies across the landscape, and perceived safety risk will vary among operators. The retention objectives for this project exceed the Forest Plan's standards/guidelines for managing snag habitat."

Issue 22. (Appendix E) *The Objectors cite Greenwald et al. (2005) at length, but fail to articulate their objection. However, based upon comments they submitted to the DEIS, we assume they are voicing the same concerns: "based on apparent inconsistencies between subsequent research and Reynolds et al. (1992), we recommend adaptation of the management guidelines to incorporate results of numerous studies conducted since 1992."*

Objectors' suggested remedy: *Replace recommendations from Reynolds et al. (1992) with those from Greenwald et al. (2005).*

Forest Service response: This comment on the DEIS was addressed in the FEIS response to comment F.8-O. In response, the Forest Service stated: "Greenwald et al. (2005) do not provide "new information" regarding Northern goshawk habitat relationships, but rather is a selective summary of existing studies already available. Dr. Richard Reynolds responded to Greenwald et al. (2005) in a paper titled Habitat Conservation of the Northern Goshawk in the Southwestern United States: Response to Greenwald et al. 2005 (Reynolds et al. 2005). Dr. Reynolds discusses the contents of his response in the first paragraph of the paper as follows:

> In their review of the literature on northern goshawk….Greenwald et al. (2005) suggested that current management for the northern goshawk, as described in the Management Recommendations for the Northern Goshawk in the Southwestern United States (MRNG; Reynolds et al. 1992…)...are inadequate….Here we show that Greenwald's et al. (2005) conclusion derives from misunderstandings of the desired goshawk habitat conditions described in the MRNG; a poor understanding of the ecological factors limiting goshawk populations, a failure to understand goshawk forest habitat as dynamic ecosystems, incomplete reviews of the literature, and inclusion of studies with limited samples of goshawks.

Due to legitimate concerns over the incomplete and non-exhaustive review of literature by Greenwald et al. (2005), as well as their apparent misunderstandings of Recommendations for the Northern Goshawk in the Southwestern United States (MRNG;

Reynolds et al. 1992), we will continue to base goshawk habitat management upon the recommendations contained in Reynolds et al. (1992)."

Issue 23. (Appendix E) *The DEIS refers to the use of the modeling procedures (wildlife, water, etc.), yet if fails to disclose the amount of error inherent in the use of the models for the purposes they are being used. The models have not been verified on the ground here, and therefore it's reasonable, scientifically, for commentors and the public to expect the IPNF to be far more cautious about using such models.*

Objectors' suggested remedy: *None*

Forest Service response: IPNF wildlife habitat models have been constructed to query the vegetation (TSMRS) database for stand structure and composition elements that assist in estimating capability and suitability of available habitat for several species with somewhat specialized habitat requirements. These habitat parameters are derived from published literature documenting species habitat preferences. However, the models are only a foundation or starting point for the analysis and not the only source of information. Information from the timber stand database was supplemented through site visits, reconnaissance surveys and aerial photo examination. Field survey notes and the data tables, which updated the information in the database, can be found in the project file.

The strategy for habitat validation is discussed in the FEIS p. B-5:

> "The IPNF has developed Forest-wide wildlife habitat capability/suitability models, which utilize Timber Stand Management Record System (TSMRS) data, for five Threatened, Sensitive, and MIS wildlife species or species guilds (Canada lynx, flammulated owl/pygmy nuthatch/fringed myotis, fisher/American marten, northern goshawk, and white-tailed deer critical mid-winter range). In order to validate these models, USFS personnel conducted site visits of representative capable habitat for these species, with emphasis placed on stands modeled as "currently suitable." Any proposed treatment areas that potentially include suitable habitat for one or more species addressed in the model were visited by the wildlife biologist or wildlife technician. Capable habitat is determined by habitat type and topographic factors. Since these do not change over time, TSMRS data presumably offer reliable information on habitat capability."

Corrected baseline habitat totals for those species for which habitat models were utilized are given in FEIS Appendix B.

Specifically, Canada lynx habitat validation is discussed on p. B-14:

> "The Myrtle-Cascade LAU contains 20,626 acres of capable lynx habitat within 462 delineated stands, while the Snow LAU contains 7,554 acres of capable lynx habitat within 212 delineated stands. USFS personnel field verified 154 stands in the Myrtle-Cascade LAU, totaling approximately 6,755 acres (see lynx.dbf, project file). Habitat was field validated in all capable stands proposed for treatment in the Snow LAU (approximately 171 acres)."

Flammulated owl/pygmy nuthatch/fringed myotis habitat validation is discussed on p. B-23:

> "The 3,105 acres identified by the habitat model as capable habitat in the Myrtle HFRA project area were contained within 130 stands. During the 2005 field season, District wildlife personnel conducted site visits to determine suitability of 81 capable stands enclosing approximately 1,092 acres (see mhfra_drysite.doc, project file). On-site habitat validation generally included only stands in lower Snow Creek, since nearly all the capable habitat in Myrtle Creek was within high or medium severity portions of the burn, and only 23 acres of timber harvest is proposed in capable habitat in this drainage. An additional ten (326 acres) stands within the Myrtle fire perimeter were determined to be unsuitable through aerial photograph examination."

Northern goshawk habitat validation is discussed on p. B-26:

> "In the Myrtle HFRA project area, the habitat suitability model identified some 12,893 acres capable of providing goshawk nesting habitat contained within 294 individual stands. District personnel visited 113 of these stands, encompassing approximately 5,028 acres of capable habitat, for field validation purposes (see gos.dbf, project file). In addition to capable stands proposed for treatment, field validated habitat included most of the capable lower Snow Creek stands and sporadic stands throughout the upper Myrtle drainage. Capable habitat in the lower Myrtle drainage was not field validated, since most of these stands were heavily impacted by the Myrtle Fire (and presumably are not supplying large contiguous blocks of suitable habitat) and are not proposed for treatment. However, 960 acres in 24 stands within the Myrtle fire perimeter were determined to be unsuitable through aerial photo interpretation.

> Additionally, recent (2002) aerial photographs were used to determine habitat suitability for another 23 stands (approximately 790 acres) that were obviously unsuitable due to recent timber harvest or had an open-canopied structure; but in a few instances were also utilized to compare unverified stands with adjacent stands of similar appearance that had been field validated."

Fisher/marten habitat validation is discussed on p. B-29:

> "Fisher habitat was verified incidentally during lynx habitat field validation. Any stands that were affirmed as prospective lynx denning through field reviews can also be assumed to provide suitable fisher/marten denning and foraging habitat, as the requirements are very similar. Additionally, any confirmed old growth within capable fisher/marten habitat can be considered currently suitable, as these mature stands provide large amounts of standing and down material that these species prefer. Approximately 2,114 acres within the project area were field-verified as lynx denning habitat, in addition to about 4,366 acres of allocated moist-site old growth not verified as lynx denning. The process results in a conservative estimate of 6,480 acres of suitable fisher denning habitat. This amount exceeds the 5,065 acres of suitable habitat predicted by the model, and additional suitable acres are available in unverified stands."

Since the project is unlikely to have meaningful impacts on white-tailed deer, the model results for this species were not validated. The timber stand database was also used to estimate snag availability for black-backed and pileated woodpeckers. The query likely underestimates small snag (potential black-backed woodpecker habitat) availability for reasons discussed on p. B-21. Similarly, only mature (at least 100 years old) and old-growth stands in appropriate forest types were considered to contain potential pileated woodpecker nesting habitat (p. B-31).

Issue 24. (Appendix C - #91) *Fire, including that which burns at high severity, has numerous ecological benefits, which the EIS did not adequately disclose or factor into its assessments of the alternatives' impacts. For instance, higher severity fire is a very effective agent in increasing large wood debris recruitment and creating snags, which are highly beneficial to soils and numerous aquatic and terrestrial species.*

Objectors' suggested remedy: *None*

Forest Service response: The FEIS discusses the potential effects of fire suppression (or lack thereof) generally under the "No Action" alternative and specifically in the cumulative effects discussions ("Current Management Activities") for cavity-nesting species (black-backed woodpecker p. B-21, B-22; flammulated owls p. B-24, B-25; and pileated woodpecker p. B-32). In addition, fire suppression effects are discussed in the analysis of cumulative effects on Canda lynx (p. B-16), grizzly bear (p. B-19), northern goshawk (B- 28), and fisher (p. B-30).

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1. (page 3) *The FEIS and related analyses regarding Grizzly Bears also falls short of statutory requirements, in part, because of the settlement agreement as a result of Alliance for the Wild Rockies, et al v. Bosworth (2001). That settlement agreement prohibited the Forest Service from moving forward with projects that would have adverse effects on grizzly bear populations in the Selkirk and Cabinet-Yaak Ecosystems.*

Objectors' suggested remedy: *None*

Forest Service response: On July 25, 2007, the IPNF reinitiated consultation for grizzly bear on the Myrtle HFRA proposed action with activities in units B1, B3, B6 and G9 deferred. It was determined that the proposed action, with units deferred, may affect, but was not likely to adversely affect grizzly bear. Therefore, the terms of the 2001 settlement regarding adverse effects on grizzly bear do not apply to this project.

Issue 2. (page 14) *The IPNF is failing to meet its duty under ESA sec. (7)(a)(1), by using its mandate to conserve listed species.*

Objectors' suggested remedy: *Additional road obliteration.*

Forest Service response: Implementation of Alternative 2 would not violate Section 7 (a)(1) of ESA. Section 7 (a)(1) does not provide any mechanism for applying its very broad goals to particular circumstances involving particular species, and it does not mandate any particular actions, as opposed to 7(a)(2) with its specific consultation requirements. Sec. 7(a)(2) directs Federal agencies to"insure that any action authorized, funded, or carried out" by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of critical habitat. Demonstrated compliance with Sec. 7(a)(2) can be found in the project file (MHFRA_BA.pdf, myrtle_BA_supp.pdf, Myrt_BA3.pdf, myrtle_BO.pdf, MHFRA_BA_amend.pdf).

The Myrtle HFRA RAPS analysis incorporated the road obliteration decisions made in the Myrtle-Cascade ROD. As a result, only 1.0 mile (road 1309-UA) of road decommissioning was analyzed in the Myrtle HFRA EIS, since there was no need or desire by the ID team to revisit road obliteration decisions that had already been made. The road decommission priority rankings (Aquatics Map 5) merely served to prioritize roads (based on erosion risk ratings) for decommissioning as limited funds become available. Approximately 33 miles of roads within the project area are addressed by this priority rating (this figure differs from the 36 miles identified in the Myrtle-Cascade ROD due to the subtraction of road segments in the Cascade Creek drainage – outside the Myrtle HFRA project area).

With the exception of ¼ mile of temporary road (an extension of the 633E road), none of the road obliteration identified in the Myrtle-Cascade ROD was mitigation for the proposed activities. In fact, the Myrtle-Cascade EIS clearly states that "road obliteration work was not considered certain to occur" (Myrtle-Cascade FEIS p. 2-37). The District will continue to look for decommissioning opportunities as funding becomes available. At least 14 miles of roads are expected to be decommissioned in 2007, including the 633E road.

It is also important to note that a number of the high erosion risk roads listed in the Myrtle HFRA FEIS Table 4.1 (p. 4-7) are on private (Forest Capital Partners, LLC) property, and some of the roads solely on USFS-administered property provide the only access route to private lands. The Forest Service cannot legally authorize road decommissioning/obliteration on private lands. Similarly, Forest Service plans to decommission roads providing reasonable access to private inholdings would likely be successfully challenged in court under the Alaska National Interest Lands Conservation Act (ANILCA). Therefore, these roads will not be considered for decommissioning.

Issue 3. (page 14) *Four consecutive years of disturbance to core habitat exceeds allowable disturbance as prescribed in the 2004 Biological Opinion for the Road Management Standards.*

Objectors' suggested remedy: *None*

Forest Service response: On May 18, 2007, USFWS withdrew the 2004 BO for access management in grizzly bear habitat. As a result, the IPNF is no longer held to the Terms and Conditions of the BO.

Issue 4. (page 14) *The project may violate Forest Plan standards to retain at least 70 mi^2 of secure habitat.*

Objectors' suggested remedy: *None*

Forest Service response: The IPNF 1987 Forest Plan Wildlife Standard 4c requires the Forest to "strive for at least 70 square miles of security." The Myrtle BMU currently contains 72 square miles of secure habitat, and will contain 73 square miles of secure habitat when all project-related activities are complete. A number of different arrangements of restricted road use and active harvest units were analyzed and discussed (see myrt_sec.pdf). This document clearly states that "a minimum of 70 sq. mi. security would still be maintained by regulating use of restricted Forest Roads (FR) 2405 and FR 1309 in addition to harvest timing restrictions" (myrt_sec.pdf, p. 1).

Issue 5. (page 20) *Cumulative effects to wildlife were not adequately assessed or disclosed.*

Objectors' suggested remedy: *None*

Forest Service response: Cumulative effects to potentially affected wildlife species are discussed in detail in the FEIS Appendix B. Specifically, the document discusses effects to Canada lynx (p. B-16, B-17), grizzly bear (p. B-21, B-22), black-backed woodpecker (p. B-24, B-25), flammulated owl (p. B-27, B-28), fisher (p. B-34, B-35), northern goshawk (p. B-31, B-32), and pileated woodpecker (p. B-38, B-39).

J. ECONOMICS

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (Economics) pg. 48. *The logging information displayed in Table 2.7, page 2-28 of the DEIS, shows that 966 acres would be logged by helicopter. The helicopter logging of 966 acres and the expected high bids of $234/MBF clearly indicates that a*

	ALL UNITS (GENERALLY SMALL < 12" DBH)						
Unit	**7-12"**	**12-15"**	**15"+**	**TOTAL CTPA**	**7-12"**	**12-15"**	**15"+**
B1	72.8	29.8	7.4	110.0	66.2%	27.1%	6.7%
B3	146.7	4.2	11.5	162.4	90.3%	2.6%	7.1%
B4	92.0	0.0	0.0	92.0	100.0%	0.0%	0.0%
B5	107.2	7.3	0.0	114.5	93.6%	6.4%	0.0%
B6	144.9	1.4	0.0	146.3	99.0%	1.0%	0.0%
D1	147.0	16.7	1.1	164.8	89.2%	10.1%	0.7%
D6	133.9	14.6	0.0	148.5	90.2%	9.8%	0.0%
D9	106.8	9.2	3.5	119.5	89.4%	7.7%	2.9%
E3	44.0	0.0	3.4	47.4	92.8%	0.0%	7.2%
E8	82.8	2.4	0.0	85.2	97.2%	2.8%	0.0%
F1	98.3	15.5	1.0	114.8	85.7%	13.5%	0.9%
G1	77.3	16.1	5.8	99.2	77.9%	16.2%	5.8%
G10	31.8	7.4	2.7	41.9	75.9%	17.6%	6.4%
G11	15.1	4.6	0.0	19.6	76.7%	23.3%	0.0%
G2	44.7	0.7	0	45.4	98.5%	1.5%	0.0%
G3	19.7	4.5	0.0	24.1	81.5%	18.5%	0.0%
G4	13.4	1.3	3.7	18.4	72.6%	7.3%	20.1%
G5	62.3	0.6	0	62.9	99.0%	1.0%	0.0%
G6	96.8	24.2	5.3	126.3	76.7%	19.2%	4.2%
G7	156.5	33.8	2.0	192.3	81.4%	17.6%	1.1%
G8	69.2	16.1	0.6	86.0	80.5%	18.8%	0.7%
G9	81.9	18.4	3.9	104.2	78.6%	17.7%	3.8%
	83.9	10.4	2.4	96.6	**86.8%**	**10.8%**	**2.4%**

significant amount of large trees, such as Douglas fir and larch would be logged from the 966 acres. In order for the timber sales to generate at least $1.3 million in net revenue after all reforestation, fuels reduction, road work, sale administration, and planning expenses are accounted for, it is apparent that a significant amount of large trees are planned to be logged.

Suggested Remedy: *None*

* CTPA = Cut Trees Per Acre

Response: As stated in the section 102(f) HFRA - projects outside of old growth focus "largely on small diameter trees, thinning, strategic fuel breaks, and prescribed fire to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type;" and, maximize "the retention of large trees, as appropriate for the forest type, to the extent that the large trees promote fire-resilient stands." This is precisely what the Myrtle HFRA is proposing in Chapter 1 of the FEIS. There is no current Forest Plan standard on the IPNF that defines the diameter of a small tree. Local research scientists (Graham and others, 2006) classified trees less than 12" dbh as generally smaller timber.
See table on following page.

K. OPENINGS

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (Openings) page 36.

The FEIS fails to disclose any descriptive information regarding the large irregular shelterwood openings between 47 and 137 acres.

Furthermore, the Forest Service proposes to leave openings over 40 acres in six units within the Selkirk and Kootenai Peak IRAs, which would be inconsistent with the exception of removing only small diameter trees.
The Forest Service similarly fails to explain how creating openings of over 40 acres will "maintain or restore the characteristic composition and structure…within the range of variability that would be expected to occur under natural disturbance regimes of the current climactic period" (See 66 Fed. Reg. 3244, 3273 January 12, 2001).

Suggested Remedy: *None*

Response: Information describing location and size of the proposed treatments greater than 40 acres can be found in the FEIS on pp. 2-14, 15, 18, 19, 21, 40, 41.

As stated in the letter from the Regional Forester, "As required by the Forest Service Manual (FSM 2471.1), openings created through the use of regeneration harvest that are greater than 40 acres in size need approval from the Regional Forester.
The proposed openings that would exceed 40 acres (Units B1, B4, B5, B6, D6, E3, and G1) have been incorporated into the watershed, wildlife, fire, vegetation, visual and other analyses. These openings are strategically placed fuel breaks that are an integral part of the fuels reduction strategy in the project area. The district received approval from the Regional Forester to exceed the 40-acre limit (see project file)".

Selection of potential treatment areas was based on the following fundamental factors:

- The need to reduce the risk of hydrophobic soils adjacent to Myrtle Creek and its tributaries, as they are the transporting mechanism for post-fire sediments.
- The need to reduce fuels in the path of historic burn patterns (see Figure 3.9 map of the 1926 fire that burned from the south to the north across several watersheds.)
- The need to treat areas at a high risk of crown fire hazard, and areas with poor ecological integrity (described in the Vegetation discussion, also see Figure 3.3 map of the terrestrial integrity in the project area.)

The fuel reduction treatment units, strategically placed on the landscape, are an integral part of the fuels reduction strategy to slow the spread of fire and keep fire out of the tree canopies, to help protect Myrtle Creek and its tributaries. The fuels reduction treatments complement this project's purpose and need (maintaining Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry; reducing hazardous fuels in Myrtle Creek watershed and adjacent forests; and, trending vegetation in Myrtle Creek watershed and adjacent forests toward conditions that would be less susceptible to catastrophic fire, while maintaining and restoring habitat for fish and wildlife species) by accomplishing the following:

1) fostering long-term reduction of risks from unwanted or undesirable wildfire, and
2) reducing or avoiding the associated post-fire effects within the municipal watershed for the City of Bonners Ferry, Idaho.

FEIS 3-70, Natural disturbance events commonly reset watersheds and influence water quality and stream habitat. Wildfire is a natural component in forest watersheds and has influenced forest soils and watershed processes for thousands of years. However, as a result of fire suppression during the last century, natural fire regimes do not exist anywhere in northern Idaho today (Smith and Fisher 1997).

FEIS p. 4-68, This alternative will provide mechanical and prescribed fire fuel reduction treatments. In particular, on portions of the project area nearing Condition Class 3, "appropriate" mechanical treatments coupled with prescribed fire can control excessive amounts of saplings and reduce surface fuels, recycle nutrients back to the ground in a "semblance" of natural processes, and also reduce the hazard of extreme and severe wildfire (Arno and Fiedler 2005). As related to fire, cumulative effects are mostly due to previous harvest and fire suppression. Restoration (fuels treatment) will trend portions of this watershed towards the desired condition – one that is "…sustainable – that is vigorous, self-perpetuating, and at low risk to…catastrophic fire" (Arno and Fiedler 2005 (Fiedler 2000a)).

As explained in the Fire and Fuels discussion in Chapter 3, fires are influenced by the available fuels, topography of the area, and weather. The only side of the "fire behavior triangle" that can be changed by land managers is the available fuels. The best general approach for managing wildfire damage seems to be managing tree density and species composition through the use of silvicultural systems that include a mix of thinning, surface fuel treatments, and prescribed fire. All three of these fuels reduction / silvicultural systems would be used to some degree, to manage tree density and treat the surface, ladder and aerial fuels (Fire and Fuels Chapter 4 discussion of Forest Fuels and Fire Behavior and Chapter 2 description of Alternative 2).

Effectiveness of the treatments in reducing the risk of uncharacteristic (and unwanted) wildfire effects was measured by the following factors: crown fire hazard, suppression capabilities based on predicted fire behavior, and improvement in fire condition class (Fire and Fuels, Chapter 4, Methodology discussion).

Analysis disclosed that over all, the proposed treatments are predicted to have the following results in the treated areas:

- Change from a Fuel Model 10 (timber with heavy timber litter) to a Fuel Model 8 (timber with light timber litter)
- Change the fire type from a Crown fire to a Surface fire (reduced potential for Crown Fire Hazard)
- Improve Suppression Capabilities from a situation with no direct attack capabilities, low production rates, and moderate to high fire severity; to a situation where direct attack is possible, production rates are high, and fire severity would be low.
- Improve the Fire Condition Class. (See Chapters 2 and 4, Tables of Fire/Fuels information.)

The fuels reduction treatments can be divided into three categories,

- even-aged regeneration cuts (irregular shelterwood),
- uneven-aged regeneration cuts (group selection), and
- intermediate/partial cuts (commercial thin)..

Detailed descriptions of the treatments can be found in Chapter 2, Silvicultural and Fuels Treatment Summary.
From the FEIS on p. 4-87, "As required in the 2001 Roadless Rule, the fuels reduction treatments proposed in the Inventoried Roadless Areas (IRAs) are designed to maintain or restore the characteristics of ecosystem composition and structure (such as to reduce the risk of uncharacteristic wildfire effects) within the range of variability that would be expected to occur under natural disturbance regimes on a landscape scale". The current conditions of the forests and the disturbance regimes that have created them are described in the FEIS on pages 3-37. The current trend away from the historical range of variability is explained in the Low Integrity/High Risk Landscapes section in FEIS on pages 3-44, 45, and Forest Openings and Composition on pages 3-55 through 58). As required in the 2001 Roadless Rule, the ladder fuels or trees to removed to reduce hazardous fuels and reduce the risk of uncharacteristic wildfire would be generally small-diameter material (See Table 1 and 2 in the next few pages).

As indicated in Fig 3.14 in the FEIS (Chapter 3 p. 55), openings created from the historical mixed severity fires were much larger than 40 acres. From the FEIS on p. 3-57, the composition of a forest changes over time. Historically, fire was the primary ecological process that determined forest composition. Prior to the 2003 Myrtle Creek fire, the last major fire in the project area was in 1926. Fire suppression tends to favor the development of shade tolerant species (Douglas-fir, grand, fir, western red cedar, western hemlock, subalpine fir, etc.) that flourish in closed canopy forest conditions.

Since the 1960's, even-aged silvicultural systems (clearcut, seed-tree, and shelterwood) have been the primary mechanism for changing species composition. In these systems, shade intolerant species (i.e., western larch, ponderosa pine, western white pine, etc.) are typically favored, although the more shade tolerant species will regenerate as well. As a result, of changed disturbance patterns, significant changes in forest composition have occurred in the Myrtle Creek HFRA area as displayed in Figure 3-19. These changes in forest composition parallel changes that have occurred across the IPNF North Zone and the Kootenai River sub-basin.

Summarized, the following changes have occurred in forest composition in the project area, as compared to the North Zone as a whole:
The percentage of long-lived seral species has ***decreased*** significantly:

- White pine has ***decreased*** from greater than 21% to 1%
- Ponderosa pine has ***decreased*** from over 9% to 3%. (This includes the acres from the 2003 Myrtle Creek Fire that were regenerated with ponderosa pine, or stands where the primary overstory species was converted to ponderosa pine).
- Western larch has ***decreased*** from almost 19% to just over13% (Many of the stands now dominated by western larch originated as a result of the 1926 Fire).

The percentage of shade-tolerant and climax species has ***increased*** significantly:

- Douglas-fir has ***increased*** from about 7% to more than 12%
- Western red cedar has ***increased*** from about 3% to more than 10%.
- The combination of grand fir and hemlock has ***increased*** from just over 1% to more than 6%.
- Subalpine fir has ***increased*** from about 29% to almost 47%

These changes in forest composition have significant implications.

- The shade tolerant species that now dominate the landscape tend to be much less resistant to fire, insects, and disease than the long -lived seral species they have replaced.
- These shade-tolerant species also tend to "hog" nutrients in their foliage, such as potassium, that trees need for disease resistance.

Refer to the photos and text that show the smaller trees (ladder fuels) that would be removed for fuels reduction. From the FEIS on p. 4-97, "The irregular shelterwood prescriptions are in stands generally dominated by trees smaller than 10 inches DBH. The large diameter western larch, white pine, and Douglas-fir (in addition to large-diameter trees of other species) would be retained in the overstory and no future overstory removals would be scheduled. The commercial thinning prescriptions would focus on retention of the biggest and best trees available in the stand. The average size of the trees removed would typically be less than 9 inches DBH". There are no current Forest Plan standard on the IPNF that defines the diameter of a small tree. Local research scientists (Graham and others, 2006) classified trees less than 12" dbh as generally smaller timber.
Field data in the table below indicate 87% of the trees to be cut for fuels reduction in the Inventoried Roadless Areas will be less than 12" dbh.
See table on the following page.

ALL UNITS (GENERALLY SMALL = 12" DBH)							
Unit	**7-12"**	**12-15"**	**15"+**	**TOTAL CTPA**	**7-12"**	**12-15"**	**15"+**
B1	72.8	29.8	7.4	110.0	66.2%	27.1%	6.7%
B3	146.7	4.2	11.5	162.4	90.3%	2.6%	7.1%
B4	92.0	0.0	0.0	92.0	100.0%	0.0%	0.0%
B5	107.2	7.3	0.0	114.5	93.6%	6.4%	0.0%
B6	144.9	1.4	0.0	146.3	99.0%	1.0%	0.0%
D1	147.0	16.7	1.1	164.8	89.2%	10.1%	0.7%
D6	133.9	14.6	0.0	148.5	90.2%	9.8%	0.0%
D9	106.8	9.2	3.5	119.5	89.4%	7.7%	2.9%
E3	44.0	0.0	3.4	47.4	92.8%	0.0%	7.2%
E8	82.8	2.4	0.0	85.2	97.2%	2.8%	0.0%
F1	98.3	15.5	1.0	114.8	85.7%	13.5%	0.9%
G1	77.3	16.1	5.8	99.2	77.9%	16.2%	5.8%
G10	31.8	7.4	2.7	41.9	75.9%	17.6%	6.4%
G11	15.1	4.6	0.0	19.6	76.7%	23.3%	0.0%
G2	44.7	0.7	0	45.4	98.5%	1.5%	0.0%
G3	19.7	4.5	0.0	24.1	81.5%	18.5%	0.0%
G4	13.4	1.3	3.7	18.4	72.6%	7.3%	20.1%
G5	62.3	0.6	0	62.9	99.0%	1.0%	0.0%
G6	96.8	24.2	5.3	126.3	76.7%	19.2%	4.2%
G7	156.5	33.8	2.0	192.3	81.4%	17.6%	1.1%
G8	69.2	16.1	0.6	86.0	80.5%	18.8%	0.7%
G9	81.9	18.4	3.9	104.2	78.6%	17.7%	3.8%
	83.9	10.4	2.4	96.6	**86.8%**	10.8%	2.4%
UNITS INTERSECTING ROADLESS AREAS (GENERALLY SMALL = 12" DBH)							
Unit	**7-12"**	**12-15"**	**15"+**	**TOTAL CTPA**	**7-12"**	**12-15"**	**15"+**
B1	72.8	29.8	7.4	110.0	66.2%	27.1%	6.7%
B3	146.7	4.2	11.5	162.4	90.3%	2.6%	7.1%
B4	92.0	0.0	0.0	92.0	100.0%	0.0%	0.0%
B5	107.2	7.3	0.0	114.5	93.6%	6.4%	0.0%
B6	144.9	1.4	0.0	146.3	99.0%	1.0%	0.0%
D1	147.0	16.7	1.1	164.8	89.2%	10.1%	0.7%
D6	133.9	14.6	0.0	148.5	90.2%	9.8%	0.0%
D9	106.8	9.2	3.5	119.5	89.4%	7.7%	2.9%
E3	44.0	0.0	3.4	47.4	92.8%	0.0%	7.2%
E8	82.8	2.4	0.0	85.2	97.2%	2.8%	0.0%
F1	98.3	15.5	1.0	114.8	85.7%	13.5%	0.9%
G8	69.2	16.1	0.6	86.0	80.5%	18.8%	0.7%
G9	81.9	18.4	3.9	104.2	78.6%	17.7%	3.8%
	94.6	12.0	2.5	109.1	**86.7%**	11.0%	2.3%

- CTPA – Cut Trees per Acre

L. WEEDS

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1. (WEEDS) page 5

Additionally, we fear that the opening of the canopy, combined with soil disturbance, burning, and proximity to weed vectors (i.e. roads, trails, skid trails, etc.) has the potential to increase spread of noxious weeds, with resultant impacts to fire and fuel conditions. Weed infestations then stress residual trees (through water and nutrient competition), making them more susceptible to insects and disease. Combined with the increased wind speeds and increased solar radiation as a result of more open stand conditions, the fire risk would actually be elevated in these stands. The FEIS failed to evaluate this critical issue, which could affect Old Growth and other critical resources.

Suggested Remedy: *None*

Response: Refer to Chapter 2 in the FEIS starting on page 2-21 for measures design to prevent the spread of weeds. I would like to see supporting rationale for the claim that residual trees, which likely have deep and/or very well-developed root systems) can be out competed for nutrients by herbaceous weeds, most of whose root systems are likely within the first few feet of soil. Leafy spurge has roots that can go as deep as 15 feet, and Russian knapweed can root as deep as 10 feet, but those are exceptions, and neither one is known or suspected to occur in the project area.

Issue 2. (WEEDS) page 18.

The FEIS fails to consider the impacts that will result after roads are reconstructed, reconditioned and/or upgraded. Increased road use will occur (logging trucks, administrative use and recreational use), which intensifies disturbance to wildlife (including grizzly bears), spread of noxious weeds (and resultant chemical applications of herbicides), sedimentation of streams through dust and erosion, motorized and non-motorized recreational use, and potential poaching of and/or other fatal conflicts with grizzly bears.

Suggested Remedy: *None*

Response: As you know from the field trips, maps, meetings and hunting regulations, the Myrtle Creek watershed is a game preserve - no hunting allowed. Disturbance to grizzly bears is discussed in the Wildlife section of these objections and Appendix B in the FEIS.

Issue 3. (WEEDS) pages 19-20.

The FEIS relies upon analysis contained within the FEIS and ROD for the Noxious Weed Mgmt. Projects (Bonners Ferry Ranger District, 1995), yet that ROD failed to identify all the roads that will require treatment under the project. As a result, the FEIS is deficient in terms of its consideration of impacts from noxious weeds, as well as herbicides, especially within the municipal watershed. While the Weed Mgmt. ROD identifies that "some small new sites will be discovered in the future" those future sites are limited to a total of 70 acres. Specific requests for information as to the identification of these "small new sites" have not revealed any specific supplement to the Weed Mgmt. ROD. This is a significant issue because of the sensitivity associated with contamination of the water supply in Myrtle Creek.

Specifically, the FEIS should evaluate any potential to exceed State of Idaho Regulations (IDAPA 58.01.02) or National Primary Drinking Water Regulations, see: http://www.epa.gov/safewater/contaminants/index.html The FEIS, ROD and timber sale contract should provide specific direction for spill prevention and spill response activities for any herbicides that may be applied in the project area.

Suggested Remedy: *None*

Response: Refer to the FEIS 2-23 under noxious weed measures that explains that the haul routes will be treated for noxious weeds and other preventatives measures that will be taken to reduce the spread of weeds. As far as contaminating the drinking water, no spraying is allowed near live water, and the risk of contaminating the drinking water by treating weeds with herbicides in Myrtle Creek watershed is remote. See Bonners Ferry RD Noxious Weed Management Projects FEIS, page 4-6 (Municipal Watersheds), page 4-7 (Best Management Practices) and Appendix D - Spill Plan - pages D-1 through D-9.

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (WEEDS) - Appendix E (page 83).

The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173: Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (Centaurea biebersteinii D.C.) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

The IPNF must disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

Response: (Noxious Weeds Report, pages 4-5, Project File, presented here for your review. Note that I cited the same references as the objectors.):

Most studies of spotted knapweed to date have focused on its dominance of native grasslands and/or prairies (Tyser and Key 1988, LeJeune and Seastedt 2001, Ridenour and Callaway 2001). Much of spotted knapweed's dominance over native species in those habitats may be attributed in part to root allelopathy (Ridenour and Callaway 2001). Increased availability of nitrogen in what were historically nitrogen-limited habitats that favored native grass species, and the resulting creation of phosphorus and other resource limitations in grassland soils, may also be a factor in spotted knapweed's success in grassland habitats (LeJeune and Seastedt 2001). LeJeune and Seastedt (2001) hypothesize that manipulation of soil resource availability with traditional techniques such as fire can affect the dominance of invasive species such as *Centaurea* in grassland habitats.
In contrast, the Myrtle HFRA project area is largely dominated by mesic to dry forested habitats with a high shrub component. Non-forested habitats comprise a small portion of the project area (see Vegetation section). While the behavior of spotted knapweed in open grassland habitats may be mostly influenced by the above biotic factors, in forested habitats tree and shrub layer canopy cover is likely a major limiting factor.

Knapweed seeds are able to germinate under full canopy, but mature plants are uncommon in shaded areas (Watson and Renney 1974); it is typically found in open canopies, sometimes up to 20 percent but most often under canopy cover of five percent or less (Allen and Hansen 1999). Both tree and shrub canopy cover have been observed to affect the abundance of spotted knapweed in forested habitats similar to those in the Myrtle HFRA project area (Hammet personal observations 1999-2005).

One study considered the effects of spotted and diffuse knapweed on the growth of confer seedlings in a montane forest in southern interior British Columbia (Powell et al. 1997). The results of the study were that abundant knapweed growth did not negatively impact conifer growth and survival during the three-year study period. While Powell et al. (1997) concluded that the lack of effects to conifer seedling growth was likely due to abundant moisture levels during the study period, only the interaction between conifer seedlings and knapweed was measured - all other vegetation had been removed from the site and was cleared every season (Powell et al. 1997). Other site variables such as availability of light were therefore not considered. The habitats in which spotted knapweed now occurs had historical fire regimes of relatively frequent, low-severity surface fires to mixed-severity fires. Spotted knapweed established in most of these habitats after fire exclusion began, so it is unclear how historical fire regimes might affect spotted knapweed or how spotted knapweed may affect these fire regimes (Fire Effects Information System 2005). Low-severity fire typically does not kill spotted knapweed plants or seeds (Sheley and Roche 1982). According to LeJeune and Seastedt (2001), low-severity fires in grasslands may increase the availability of nutrients that would allow native species to successfully compete with spotted knapweed. Although severe burns may reduce germination of spotted knapweed seeds (Abella and MacDonald 2000), severe wildfire would probably favor expansion of knapweed by creating widespread areas of bare soil and increasing the amount of sunlight that reaches the ground surface (Arno 1999, Sheley et al. 1999). Spotted knapweed infestations have been associated with reductions in forage production (Harris and Cranston 1979), plant species richness and diversity (Tyser 1990), soil fertility (Harvey and Nowierski 1989, Olson 1999) and wildlife habitat (Bedunah and Carpenter 1989), as well as increases in surface water runoff and stream sedimentation (Lacey et al. 1989).

M. CUMULATIVE EFFECTS

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. (Cumulative Effects) (page 8).
Storms and major washouts have occurred repeatedly within the past year and Bonners Ferry has been forced to change their water intake to the Kootenai River. These effects result from mismanagement of National Forest, State, and private lands within the watershed. The current state of degradation of the watershed is not a result of "catastrophic" wildfire. The inability of the system to retain water, generation of huge sediment loads, and impacts to the City's water supply result from past manage activities of fire suppression, extensive logging, and extensive road building. If the collaborative group is concerned with maintaining their City water supply.

Suggested Remedy: *Include an overall watershed strategy plan that would end logging, road building, mining, grazing, and herbicide use throughout the watershed.*

Response: We disagree with your opinion, the aquatics and soils sections of the FEIS clearly describe the impacts the 2003 Myrtle Creek Fire had and will continue to have on the watershed. Roads that have a high risk of failure and could contribute sediment to the drinking water are scheduled to be decommissioned (see Map Appendix). There are no mines or grazing allotments in the project area. The fuels reduction units are subject to site specific measures to protect multiple resources as explained in the Chapter 2 of the FEIS. Your extensive concerns regarding "mismanagement" and can be answered by referring to the Cumulative Effects Response below.

Issue 2. (Cumulative Effects) (page 20, 21, 22).
This project lacks a meaningful analysis of cumulative impacts by failing to disclose, list and describe how the effects of each past, present, and reasonably foreseeable project may or may not contribute to the current degree of effects that, cumulatively, may be significant. It also fails to adequately analyze whether the cumulative effects of aspects of the proposed action could threaten violation of Federal law and regulation.

NEPA mandates that the FEIS adequately disclose and analyze the direct, indirect, and cumulative effects of the proposed action and alternatives. The IPNF failed to adequately disclose and analyze the direct and indirect effects of important aspects of the proposed action. There is a failure to account for the cumulative effects of these components of the proposed action combined with other past, present, and reasonably foreseeable actions.

This project lacks a meaningful analysis of cumulative impacts by failing to disclose, list and describe how the effects of each past, present, and reasonably foreseeable project may or may not contribute to the current degree of effects that, cumulatively, may be significant. It also fails to adequately analyze whether the cumulative effects of aspects of the proposed action could threaten violation of Federal law and regulation.

The FEIS does not disclose how these logging practices have changed. They haven't addressed changes since the harvests were completed in the area in 1996, 1997, and recently in the Myrtle Cascade Timber Sale in 2003. Monitoring information regarding these actions should be included in the FEIS.

The FEIS does not discuss the extensive unregulated timber harvest that occurred prior to 1950.

Suggested Remedy: *None*

Response: As outlined in CEQ guidelines and the "**Cumulative Effects Response**" below , cumulative impact analysis requires <u>some</u> cataloguing of past projects and their effect on the current project area. The cataloguing should provide sufficient detail to allow for analysis of the differences between prior projects and proposed projects, which could provide the information necessary to consider alternatives that might have less impact on the environment.

For example, past timber management is described in the FEIS on pages 3-51, 52, 4-7 and Map Appendix page 18.
From the FEIS on page 4-7 (same page the objectors reference), "the project area has been influenced by past timber harvest activities since the 1950s. Records indicate that timber harvest started on National Forest System lands in the project area in the 1950s and continued into the 2000s with some of the earlier records being incomplete. Incomplete information includes data such as the name of a particular sale, or activity codes used in the TSMRS database. Often the missing data can be inferred through use of old photos. Information such as the name of a sale is not pertinent to analysis of the effects that may have been generated by that sale."

CEQ stated that "generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions" (CEQ memo p. 2).

Logging practices have changed as described in the "Cumulative Effects Response" below. Past monitoring reports from 2000 to 2004 are currently available online on the IPNF web site at

http://www.fs.fed.us/ipnf/eco/manage/forestplan/index.html#fpmon and for 2005 and 2006 in the near future. The same reports plus those for the years of 1998 and 1999 are also enclosed in the Myrtle Creek HFRA reference section.

Resources in the project area that were subject to a cumulative effects analysis are explained in the FEIS 2-5 under Key Issues, Analysis Issues, and Indicators. Issues not Discussed in detail are on page 2-9.

Cumulative effects analysis is applied using CEQ regulations, Key Issues and their respective indicators.
For example, refer to the FEIS 2-8, notice that Soils is Key issue with specific indicators / Measurements in Table 2.6 which assist the reader in gauging the impacts (if any) to that resource.

The analysis area for soils and Soil Quality Standards (SQSs) is the individual unit, also called activity area (FEIS 4-76; R1 – SQS: PF Doc. SOIL-R-35). The activity area is considered an appropriate geographic unit for assessing soil environmental effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area. Cumulative effects to soils need to overlap in time and space and so are not expected outside the proposed units (see pages 4-82 through 4-86 of the FEIS). However, one exception recognizes the potential for slope instability concerns (FEIS 4-85), which were therefore included on pages 4-85 and 86 of the cumulative effects analysis.

Past, proposed, and reasonably foreseeable activities and their impacts in regards to soils are stated on FEIS page 4-83 through 85. The Environmental Consequences section in the (FEIS page 4-76 though 87) discusses potential future impacts from the proposed Myrtle HFRA activities by addressing direct, indirect, and cumulative effects on soils from vegetation treatments (4-79, 83, 84), roads (4-80, 83, 85, 86), landings (4-80), mitigation measures (4-80), soil productivity (4-81), coarse woody debris and organic matter (4-81, 86), prescribed burning and slash disposal (4-82, 85, 86), reforestation (4-82), noxious weed control (4-82, 85), wildfires (4-84), slope stability (4-85), and gathering of forest products (4-85).

The expected impacts in the area from the proposed project Alternative 2 are incorporated into Table 3.20 (page 3-72) and show that approximately 151 acres of soils are expected to be impacted from harvest and temporary road re-construction. Alternative 5 (PF Doc. SOIL-8) is estimated to impact approximately 87 acres of soil. These estimates are further discussed and put into context on page 4-79 as well as in Table 2.16 on page 2-42.

Objector: Idaho Conservation League and The Wilderness Society
Objection Number: 07-01-00-1040

Issue 1. (Cumulative Effects) page 20.

While we recognize that attempts were made to consider cumulative impacts, in light of past legal decisions, we do not feel that the analysis sufficiently considered effects with regards to the abovementioned resources. Specifically, cumulative effects to soils, fire and fuel conditions, water quality, weeds, fish and wildlife, and roadless areas were not adequately assessed or disclosed.

Suggested Remedy: *None.*

Cumulative Effects Response: In *Lands Council v. Powell*, the U.S. Court of Appeals for the 9th Circuit held that, under the circumstances presented in the case, proper cumulative impact analysis required some cataloguing of past projects and their effect on the current project area. Furthermore, such cataloguing should provide sufficient detail to allow for analysis of the differences between prior projects and proposed projects, which could provide the information necessary to consider alternatives that might have less impact on the environment. Within this EIS we have provided information of relevant past, present and reasonably foreseeable projects/activities that have occurred, are occurring, or are proposed to occur within each of the resource cumulative effects areas examined in this analysis (reference). Additionally, an adequately detailed discussion of the effects of these past, ongoing, and reasonably foreseeable activities has been provided to promote an informed assessment of environmental considerations and aide in assessing whether one form or another of harvest would assist in meeting the project's purpose and need for action with minimal environmental harm.

Subsequent to the release of this EA/EIS, the Council on Environmental Quality (CEQ), whose responsibility it is to coordinate federal environmental efforts and work closely with agencies and other White House offices in the development of environmental policies and initiatives, provided guidance to federal agencies on the consideration of past actions in cumulative

effects analysis[2]. CEQ stated that "generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions" (CEQ memo p. 2). Cumulative impact is defined in CEQ's NEPA regulations as the "impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" (40 CFR 1508.7). CEQ has interpreted this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions (CEQ memo p. 2).

With respect to past actions, during the scoping process and subsequent preparation of the EIS, the Forest Service determined what information regarding past actions was useful and relevant to the analysis of cumulative effects. While CEQ found that cataloging past actions and specific information about the direct and indirect effects of a past project's design and implementation could in some contexts be useful to predict the cumulative effects of the proposal, the regulations do not require the Forest Service to catalogue or exhaustively list and analyze all individual past actions (CEQ memo p. 3).

This EIS has provided a description of known past activities and their effects; however due to the marked difference between past and current land management practices and policies, this analysis did not further aide in assessing whether one form or another of the proposed activities would assist in meeting the project's purpose and need for action with minimal environmental harm. The evolution that has occurred in land management practices is the result science and our ongoing monitoring actions.
On the forest, early to mid 20th century road construction activities focused construction mainly through river valleys, riparian areas, floodplains, and adjacent hillsides. The roads efficiently provided access but decreased the land's effectiveness as wildlife habitat and constricted stream channels, while providing a new avenue for erosion and discharge of sediment into streams. Roads on national forest lands often were simply an expansion of existing trails and paths that provided access so that they would accommodate newer equipment and current land uses. In some situations, roads were developed on abandoned railroad beds. In both cases, the location and design were predetermined from the previous use and era. As time progressed, roads were "designed" and located to achieve their primary purpose, which was to provide access and haul product at a minimal cost. In the decades following World War II (1950s –'70s), the road network was rapidly expanded to support the domestic need for lumber in housing construction.

Over the last twenty years, both road design and location have evolved as necessary tools to not only provide efficient access; but also to protect the valuable watershed resources they encroached upon. Forest Service Best Management Practices (FSH 2509.22 Soil and Water Conservation Practices Handbook) currently incorporated into road construction/reconstruction activities on the forest include:

- Road surfacing (gravel, etc…) was incorporated to not only provide better trafficability; but also to prevent and control erosion from the road surface.
- Road drainage controls are now being incorporated into designs that:
  - Reduce the erosive flows in ditches by providing frequent cross-drains to relieve ditch flows;
  - Avoid water movement down the road by dispersing the drainage quickly by crowning or outsloping the road surface;
  - Stabilize ditches by lining; and
  - Disperse drainage water (that often carries sediment) onto stable forested slopes before ditches discharge into waterways.
  - Allow new and existing stream crossings to safely pass extreme events (i.e. 100 year flood event).
- Special construction techniques and designs have been utilized (i.e., full- or partial-benching of roads) to avoid unstable side casting of waste materials; windrowing clearing slash to prevent sediment delivery to streams from construction activities themselves as well as from erosion of road fills and treads that are not yet protected with erosion control vegetation.
- Some roads now are designed to take advantage of the non-uniformities of the slopes they cross by "rolling grades" and grade breaks to prevent the potential for accumulations of water or excessive ditchflows that have destabilized the road bed or cause surface erosion in the past.
- Designers and planners develop road networks that avoid highly erosive or unstable slopes utilizing the *land system inventory*, hydrologists, soil scientists, and geotechnical engineers.
- Road crossings are being located at more stable sites and crossing designs are now considering water quality and fish passage as primary design criteria, rather than criteria that just account for costs and traffic efficiency.
- Roads are being located well away from streams and their riparian areas where ever practicable; and the number of crossing sites is being minimized. These features are in stark contrast to past road locations that sometimes resulted in

[2] CEQ Memorandum to the Heads of Federal Agencies regarding Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.

chronic sources of sediments, extended exposure of streams to direct sunlight resulting in temperature elevations, and nearly permanent reductions of the replacement sources of the structural components of streams and aquatic cover, riparian deadfall.

- In the past, when a road's utility ended, the road was simply abandoned. These abandoned roads have been a substantial water quality and slope stability issue as they have deteriorated, especially without any maintenance. Current practice is to restore key abandoned or no longer useful roads to a "hydrologically neutral" condition where its remnants are self-maintaining and are no longer disturbing slope stability or the movement of slope water, either on or below the soil surface or the natural functions and adjustments of streams, wetlands, and other water bodies.

Impacts to forest water and soil resources from logging practices and road activities have also been reduced over the past 20 years with the introduction of Best Management Practices (BMPs) and Inland Native Fish Strategy (a.k.a. INFISH) management direction. Based on research studies, current BMPs and INFISH Riparian Habitat Conservation Areas (RHCAs) can reduce sediment yields compared with historical practices (Lee et al 1997, USDA 1995).

In 1972, Section 208 of the Clean Water Act Amendments established the regulatory framework for non-point source pollution control thorough use of BMPs. BMPs are defined in Idaho as a practice or combination of practices determined to be the most effective and practicable means of preventing or reducing the amount of pollution generated by non-point sources (IDAPA 20.02.01). BMP monitoring is annually conducted by the forest to validate the implementation and effectiveness of BMPs associated with land management activities. Monitoring results are used to adapt future management actions where improvements in meeting water quality objectives are indicated. Forest monitoring of BMPs indicates that in most cases they continue to function as expected and are meeting their intent (IPNF 2002, 2003).

At the time the IPNF Forest Plan was written (circa 1987), the emphasis was on developing a commodity production strategy while minimizing impacts to watersheds and aquatic resources, including fish. The strategy for watershed management was constructed in the forest plan as a "maintenance" objective. In some situations, thresholds, or "minimum impact" standards defined the criteria for maintenance. To ensure that watersheds and aquatic resources were maintained during forest management activities, BMPs were applied. Despite the existing forest plan standards and BMPs, the condition of fish habitat on the forest was declining, primarily due to timber harvest and road building activities (IPNF 1992).

In 1995, the forest plan was amended to include INFISH management direction (USDA 1995). The implementation of INFISH gave greater protection to aquatic resources, especially riparian-dependent systems. The management direction provided by the INFISH amendment is designed to protect and maintain the structure and function of riparian and aquatic systems. INFISH contains goals for healthy, functioning watersheds, riparian areas, and associated fish habitats; Riparian Management Objectives (RMOs), and performance-based standards and guidelines for land management activities (i.e., timber, roads, grazing, recreation, minerals, fire/fuels, lands, riparian area management, watershed restoration, fisheries and wildlife restoration). Instead of allowing some "acceptable" level of effects on riparian and aquatic systems, INFISH aims to protect aquatic resources from detrimental effects. INFISH gives riparian-dependent resources priority over other resources in the Riparian Habitat Conservation Areas (RHCAs), so that while RHCAs are not "lock out" zones, activities that occur in them must either benefit riparian and aquatic resources or at least "not slow the rate of recovery below the near natural rate of recovery if no additional human caused disturbance was placed on the system" (USDA 1995). Incorporation of the INFISH management direction into the forest plan has led to improvement in the condition of aquatic resources by offering greater protections to the critical riparian areas. In addition, INFISH allows for and encourages watershed restoration. Restoration has occurred over the years across the IPNF. Over 1,300 miles of roads have been decommissioned on the IPNF from 1991-2003 (IPNF 2003).

Harvest methods and removal of timber products from the national forest has changed substantially over time. Early harvest methods (1950s, '60, and '70) focused primarily on financial objectives of providing low cost wood products. Harvest placement often occurred in the highest volume, easily accessible stands. Timber harvest often occurred within riparian areas and adjacent to streams. Most of the harvest prescriptions were primarily designed to produce healthy young stands with shorter rotation ages.

Modern timber harvest prescriptions and design emphasizes desired conditions of the forest after the harvest. This usually results in the retention of various amounts of trees in a post-harvest stand, addressing objectives that may include wildlife habitat, watershed conditions, hazardous fuels, visual quality, soil productivity, forest health and others. On sites determined suitable for timber production, timber harvest may also produce timber products on a regulated basis while compatible with these other resource objectives and values. Some examples where timber production and resource objectives can be achieved simultaneously are:

- Reducing tree densities to decrease bark beetle hazard, thereby prolonging the development of the forest and maintaining tree cover;
- Managing tree canopies to limit fire spread from the forest floor to the tree crowns;

- Developing flammulated owl habitat in ponderosa pine forest through removal of smaller stems crowding larger trees, thereby providing more room to grow for the remaining trees, and open stand conditions favored by the owl;
- Designing harvest patterns across the landscape to facilitate wildlife movement, such as providing corridors and preserving travel routes for ungulates. Also, using harvest prescriptions and landscape patterns as part of a wildfire hazard reduction strategy;
- Increasing the amount of native western white pine, western larch and ponderosa pine, which generally are insect and disease resistant and are long-lived, as well as increasing western red cedar in valley bottoms, where it historically was more abundant than today;
- Using variable retention harvests to meet visual management objectives.

Other elements of modern harvest prescriptions that address specific resource objectives include retention of snags for cavity nesters, retention of down wood for soil nutrition and wildlife habitat, maintaining sediment filtering vegetation near riparian areas, and maintaining vegetation diversity through hardwood retention and protection of rare plants.

Increased environmental awareness has also lead to improvements in logging systems that we use to remove trees from the forest. Early harvests emphasized cheap, labor intensive logging methods, such as railroad, horse, short distance jammer systems, and tractor logging. Logging systems were selected primarily by the least expensive method to transport the trees from the forest to the mill. This sometimes involved harvesting on steep slopes, creating excessive soil disturbance and increasing the risk of erosion. Streams were sometimes used as a method to transport logs from the harvest site, causing impacts to the aquatic system and adjacent riparian habitat. Road systems were sometimes dense (10 mi. sq. mi.) to facilitate rapid and inexpensive removals, in some cases compromising water quality.

Today's logging systems recognize and reduce the threat of environment harm in a number of ways. Tractor logging generally occurs on slopes 35% or less, and is limited to designated locations, reducing soil impacts. Skyline and other cable yarding systems are used on steeper slopes, which greatly reduces the amount of soil disturbance. Increasingly, helicopter logging is used, which extends yarding distances and thereby reduces road densities. A suite of best management practices and forest plan standards and guidelines aids in the development of the least impactive design possible. Monitoring during and after the sale is completed provides a valuable feedback loop that quickly identifies and corrects variances should they occur.

The forest ceased regeneration harvest of allocated old growth stands a number of years ago. Presently, our focus is on maintaining the old growth stands that we have and allocating additional stands for future old growth as they mature. On drier sites, restoration of old growth may include various mixes of prescribed fire, and thinning to restore historic more open old growth stand structures and reduce risk of stand replacing fire. Planting of shade-intolerant, fire-adapted species may also be done if these are in short supply. On these dry sites, our objective is to restore and sustain the old growth by retaining the large old trees, preserving the old growth characteristics, and restoring historic old growth structures and processes (IPNF 2003). For the above stated reasons, changes in road construction/reconstruction and maintenance practices; implementation of INFISH management direction and watershed BMPs; and the changes that have occurred in Forest Service harvest practices and objectives, an in-depth analysis of the direct and indirect effects of each past action occurring within this project's analysis area(s) would not help illuminate or inform the analysis about alternatives presented for this project. Where appropriate, information obtained from monitoring the effects of recent similar actions has been used to predict the direct or indirect effects of the proposed action and its alternatives.

N. RECREATION

Objector: The Lands Council, WildWest Institute, Selkirk Conservation Alliance, Alliance for the Wild Rockies, Kootenai Environmental Alliance
Objection Number: 07-01-00-1041

Issue 1. page 23. *The FEIS does not include any analysis or mention of the impact of snowmobiles in the area. No EIS has been conducted for snowmobile use.*

Suggested remedy: *None*

Response: It is recognized (FEIS, page 4-84) that the Snow Creek watershed is an area which receives snowmobile use and will likely see an increase in recreational vehicle access due to an improved road surface. This will force additional needs in road and trail maintenance. Illegal motor vehicle use occurs, but is infrequent at this point. As you know, snowmobile use in the Selkirks is being analyzed at this time under the IPNF winter travel plan (see IPNF website).