Myrtle Creek HFRA Project
Record of Decision

August 2007

Myrtle Falls

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Format of the Record of Decision

The Myrtle Creek watershed lies within the management boundaries of the Bonners Ferry Ranger District on the Idaho Panhandle National Forests. While the upper part of the drainage is a checkerboard of National Forest System (NFS) land and privately owned timber lands, the lower part is almost exclusively NFS lands. Approximately two and one-half miles to the east of the Forest boundary and beyond the mouth of Myrtle Creek is the headquarters of the Kootenai Tribe of Idaho; the community of Bonners Ferry, Idaho is approximately four miles east of the Forest boundary.

The Myrtle Creek Healthy Forests Restoration Act (HFRA) Project is a fuels reduction project designed to reduce the severity of potential wildfire effects and protect the drinking water for the Bonners Ferry community. The Bonners Ferry Ranger District of the Idaho Panhandle National Forests has evaluated existing conditions in the Myrtle Creek HFRA project area and analyzed ways to move toward future conditions that will lessen fire effects and ultimately meet community goals for this municipal watershed.

This Record of Decision (ROD) describes the evolution of the project and my selection of Alternative 2 for implementation of the Myrtle Creek HFRA Project. The short-term effects and long-term benefits of the Selected Alternative are described, as well as the anticipated short-term and long-term outcomes of undertaking or not undertaking the project. This Record of Decision is formatted in the following sections:

Section 1. Introduction. Information on the social aspects of this project as well as the primary natural resource aspects.

- Community's reliance on the Myrtle Creek municipal watershed
- Overview of potential wildfire-related threats to the watershed
- Public collaboration efforts
- Issues and guidelines used in locating strategically-placed fuels reduction treatment areas

Section 2. Request for Action. Describes the request from the City of Bonners Ferry, Boundary County, and the Kootenai Tribe of Idaho for a fuels reduction project in the Myrtle Creek watershed in the aftermath of the 2003 Myrtle Creek Fire.

Why Here?

- Existing conditions and risks
- Desired outcomes

Why Now?

- Myrtle Creek Fire of 2003 burned 3,200 acres in the watershed and negatively affected drinking water quality
- Emergency backup water sources are limited and expensive
- The importance of beginning fuels reduction treatments and road improvements to lessen risks to the City's water supply

Section 3. Reaching My Decision. Describes factors I considered including

- Risks to the community
- Activities in Inventoried Roadless Areas
- Treatment options in old growth forests

Section 4. My Decision. Describes activities that will reduce the threat of unwanted fire and its consequences, and which are designed to reduce risks to the municipal water supply.

What Will be Done?

- Strategically placed fuel reduction treatments
- Road management for specific roads, including maintenance or decommissioning
- Site-specific implementation and effectiveness monitoring.

Why Will it be Done?

- Short-term effects of the Selected Alternative
- Long-term beneficial outcomes of the Selected Alternative
- Short-term and long-term outcomes of not implementing the project.

Section 5. Rationale for My Decision. This section goes into more detail about the considerations that went into my decision, including:

- Use of Best Available Science
- Other Alternatives Considered
- Fuels Reduction Treatments
- Road Management Activities (Transportation System)
- Making a Balanced Decision
- Consideration of Key Issues and Analysis Issues

Effects of the Selected Alternative. This section summarizes the anticipated effects of implementing the selected alternative (Alternative 2).

- Short-term and long-term effects
- Benefits

Effects of Taking No Action. In reaching a decision, I considered all of the analyses then weighed the outcomes and effects of taking "no action" against the other project alternatives. This section describes what our analysis showed could happen to the water and other key resources if none of the proposed activities were undertaken with this project?

- Short-term and long-term effects
- Long-term outcomes

Effects of Other Alternatives During the public collaboration and project scoping, discussions were brought forward regarding Inventoried Roadless Areas, old growth stands, and grizzly bear core habitat. Alternative 5 was developed and analyzed to address those comments. Other alternatives considered but not analyzed in detail (Alternatives 3 and 4) are also briefly described in this section.

Section 6. Use of the HFRA Authority. This portion of the ROD outlines the background and requirements of the Healthy Forests Restoration Act and the requirements for public collaboration and the analysis of projects. It explains how the Myrtle Creek project meets those requirements.

Section 7. Consistency with the Forest Plan and Use of Best Available Science

Section 8. Consistency with Laws, Regulations, Forest Service Policy and Other Policies

Section 9. Implementation of My Decision Describes the implementation timeline requirements for projects authorized under HFRA and when implementation can begin.

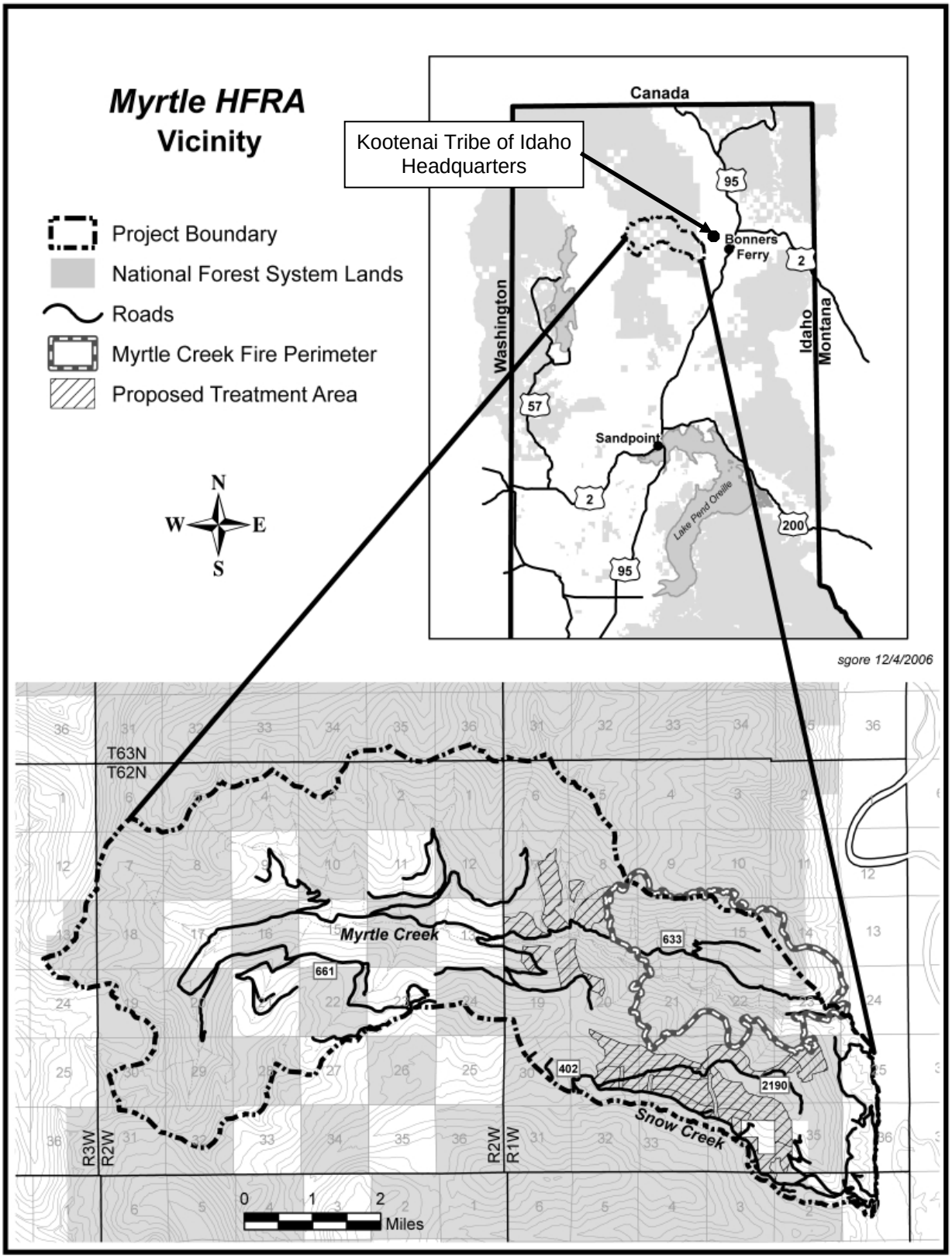

Figure 1. Myrtle Creek HFRA Project Vicinity Map

Section 1. Introduction / Background

Project Background

In September 2003 an uncharacteristically[1] severe wildfire burned approximately 3,400 acres[2] in the Myrtle Creek drainage – the primary source of high-quality drinking water for more than 4,200 residents of the City of Bonners Ferry, including members of the Kootenai Tribe of Idaho. The City has used Myrtle Creek water since 1928; however, the Kootenai Tribe has drawn sustenance from the waters of Myrtle Creek for countless generations. The leaders and citizens of the city, Tribe and county do not want their drinking water to be negatively impacted in such a way again.

Beyond the cost of fighting the fire[3], more importantly for more than a month people drank smoky-flavored water from Myrtle Creek. People again felt the effects of the wildfire on July 4th, 2004 when a severe thunderstorm with heavy rains saturated the charred slopes of the drainage, sending sediment into Myrtle Creek. The City's intake infiltration system was filled with sediment, forcing the City to filter and use additional treatments for their water supply to alleviate public health concerns. Storms during the winter of 2006 and spring of 2007 continued to threaten the drinking water and necessitated the use of an outdated, antiquated backup water source and pumping system when sediment caused excessive turbidity levels.

Section 2. Request for Action

The Kootenai Tribe of Idaho and City of Bonners Ferry, Idaho (collectively, with the Boundary County Commissioners, the Joint Powers of Boundary County) are responsible for providing clean, safe drinking water for the people they serve. The wildfire in 2003 raised their awareness and concerns for potential risks that could be triggered by another large wildfire in the municipal watershed. In the spring of 2004 the Joint Powers met with the Forest Service to discuss possibilities for reducing fire-related threats to the water. Their desire was, and still is to take active steps to reduce fire-related risks and hazards and related effects of future wildfires in the municipal watershed and to maintain Myrtle Creek as their source of drinking water while protecting other values. They also believed that the Healthy Forests Restoration Act could provide the avenue to meet their needs.

The ability to continue using Myrtle Creek as the primary source of municipal water for the City of Bonners Ferry and its customers relies on the management of the National Forest System lands within and adjacent to the Myrtle Creek watershed. The Joint Powers asked us specifically to pursue opportunities to reduce the heavy buildup of hazardous fuels in the short-term as well as look at a long-term strategy that would reduce the risk of future uncharacteristic and unwanted fires in the municipal watershed.

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[1] The 2001 Roadless Rule defined *uncharacteristic* fire to mean: *"The effects of uncharacteristic wildfires often include unnatural increases in wildfire size, severity, and resistance to control and the associated impacts to people and property."*

[2] The Myrtle Creek Fire burned a total of approximately 3,600 acres. About 3,400 acres burned in the Myrtle Creek watershed and approximately 200 acres burned in the Cascade Creek watershed. The Myrtle Creek watershed is approximately 27,000 acres in its entirety.

[3] As of September 15, 2003 total cost of the fire suppression efforts to date was estimated at $4.6 million. Burned Area Emergency Response activities added approximately $1.3 million, for an overall cost of nearly $6 million.

Public Collaboration

One foundation principle of the Healthy Forests Restoration Act of 2003 (HFRA) is community-based collaboration. In 2001 the Joint Powers had established the Kootenai Valley Resource Initiative[4] (KVRI) to provide a collaborative forum to specifically address resource issues affecting Boundary County. While the Joint Powers serve as co-chairs of KVRI, they also work with an 11-member board and establish sub-committees to work on various topics. The sub-committees follow a collaborative process to formulate recommendations to the board who then vote (by consensus), and through the Joint Powers takes the appropriate action with affected or interested parties.

The Joint Powers (as co-chairs of KVRI), suggested forming a community based KVRI sub-committee to explore opportunities to address their concerns. The Myrtle Creek Working Group (hereinafter referred to as Working Group) was specifically tasked with addressing and developing a long-term approach to management of the municipal watershed. Open to all members of the public, the Working Group provided a forum for discussions among local government agencies including the Kootenai Tribe of Idaho, interested members of the public and Forest Service personnel. The purpose of the KVRI group was to look at community goals for Myrtle Creek, develop an overarching goal for the watershed, and help to identify issues. KVRI published advance notice of Working Group meetings, open to all members of the public, in the local newspaper (Bonners Ferry Herald).

Starting in July 2004 and continuing for the next 18 months this group met at the table and in the field a total of ten times. Representation was diverse. In addition to the Joint Powers, participation included local citizens, representatives of Boundary County Soil Conservation District, local timber industry, U.S. Fish and Wildlife Service (USFWS), agencies of the State of Idaho (Dept of Fish and Game, Dept of Lands, Dept of Environmental Quality) and members of local and regional environmental groups. A complete list of participants is shown in a table located at the back of this Record.

Facilitation of the Working Group was provided by the Kootenai Tribe of Idaho. Seventy-four persons attended one or more meetings or field trips, approximately 30 additional people were on the project mailing list but did not attend any meetings or field trips; five members of the media attended various meetings or received printed information and reported on the project.

Goals for the Watershed

The Working Group discussed an array of needs in the watershed and asked the Forest Service to evaluate the current and future conditions of the watershed using the following goals:

- Maintain a continuous supply of potable water from Myrtle Creek for the City of Bonners Ferry and its customers;
- Reduce the risk of catastrophic fire in the Myrtle Creek watershed while maintaining and restoring habitat for fish and wildlife species.

The group developed a set of objectives with one central theme: *Reduce hazardous fuels to lessen risks to the clean drinking water* for the City of Bonners Ferry. As technical support to the Working Group, the Forest Service (Bonners Ferry Ranger District) was asked to look at fuels reduction work that could

[4] KVRI was 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. Sub-committee "Working Groups" established as needed provide a forum for public collaboration on resource issues important to KVRI and the community. The groups forward recommendations to the 11-member KVRI board who then take the appropriate action with the affected or interested parties. Members of the board represent interest that include corporate and non-corporate agricultural landowners, private timber lands, public land management agencies, natural resource conservation/environmental groups, social/cultural/historical, business and industry, fish and wildlife.

be done in and around the watershed to meet the objectives. Although the goals were focused, given the rich diversity of the area and the range of interests within the collaborative group, it was clear that reaching agreements would take some work. In particular, with the national debate over roadless area values, and the passage of the 2001 Roadless Rule, we understood the complexity and emotions surrounding any proposals that included treatments in IRAs.

Values and interests within the project area include:

- Myrtle Creek is the primary and preferred and only viable source[5] of clean drinking water for 4,200 Boundary County residents.
- Two Inventoried Roadless Areas (Kootenai Peak and Selkirk IRAs).
- Habitat for the threatened and endangered grizzly bear, woodland caribou and Canada lynx.
- Old growth forests within the project area.

The Joint Powers recognized the importance of involving diverse regional groups from the beginning of the collaboration process, due to the groups' evolving positions. Since the late 1980s, The Lands Council (Lands Council) of Spokane has been engaged with the Forest Service on roadless area issues in both the Kootenai Peak and Selkirk IRAs. In 1989, after negotiations with Forest Service, Lands Council stated they would not challenge the Curve Creek Timber Sale in the Kootenai Peak IRA or the Trout Fisher Timber Sale located in the Selkirk IRA. However, in 2001 Lands Council did file an administrative appeal of the Myrtle-Cascade EIS (which included treatments in both the Kootenai Peak and Selkirk IRAs) partly because of their concerns related to roadless area issues.

The Idaho Conservation League (ICL), including its local representatives, has also been actively involved in roadless area issues in these same IRAs for decades. Most recently, they had concerns with the Whitebark Pine Restoration Project which also includes treatments in the Selkirk IRA.

The Mayor of Bonners Ferry, Darrell Kerby, acknowledged the roadless issue during the group's first field trip in September of 2004, but asked the Working Group to please remember that ultimately any proposal brought forward should be about *the quality of the drinking water* first and foremost.

Developing the Community's Proposal

This section describes the discussions held during the Working Group's meetings and field trips, the information presented by Forest Service personnel, and the recommendations we received from the Working Group, KVRI Board and the Joint Powers. It also includes information about overall public scoping and comments received on this project.

Working Group Meetings

July 29, 2004 Meeting

During this initial meeting to form the Myrtle Creek Working Group, the Joint Powers articulated their concerns regarding the Myrtle Creek area:

- Long-term protection and enhancement of the watershed as the long-term primary source of drinking water for the people of this community.

They shared their visions for a KVRI sub-committee:

- Focused on discussing a potential hazardous fuels reduction project

[5] Use of the Kootenai River or Cabinet Mtn. Water District as sources of water are both limited by their inadequate daily capacities during times of peak needs, the financial burden of extra costs for delivery and treatment, and potential for limitation on fire fighting capabilities. Due to the geology and soils of Boundary County, ground water wells are not economically feasible.

- Using a science-based ecosystem approach that takes a broad look at the landscape to meet the goals.
- Using available resources.
- Working collaboratively and "up front" with a federal land management agency to develop a project focused on outcomes not on specific methods.

The facilitator explained the KVRI collaborative approach: KVRI works toward consensus to move forward; however, at times a subject can be tabled until more information is available. The Bonners Ferry District Ranger gave the group a brief description of the 2003 Myrtle Creek Fire and concerns that had risen in the community. The presentation included the history of Forest Service management and current conditions in the Myrtle Creek watershed, as well as information about HFRA and National Environmental Policy Act (NEPA) requirements.

At the conclusion of the meeting, comments from participants included thoughts that:

- The KVRI open forum benefits the community and allows public input on policies (which is good).
- While people involved in KVRI sub-committees might not always agree, everyone is present and is heard.

August 23, 2004 Field Trip: Thirty-seven people participated in the first Myrtle Creek field trip. The group's purpose was reviewed (to generate community goals for the drinking water supply for Bonners Ferry and for the watershed); along with the steps in the process that included conveying the community's goals to the Forest Service who would then determine the actions necessary to reach the goals. The group's objective was to focus on outcomes and results – clean and sustainable drinking water.

It was explained to the group that we would also be working with the general public through the NEPA scoping process and would use that information, along with the Working Group discussions and KVRI recommendations, in the environmental analysis.

At various stops along the route through the Myrtle Creek watershed, presentations and discussions focused on the following:

- Historical perspective – road construction/improvements, vegetation treatments, use as a municipal water source, improvements in drinking water over time.
- Forest health – differences between higher elevation moist forest types and lower elevation dry forest types, comparing current conditions to historic forests and determining which forest components are out of balance, and why.
- Old growth – including old growth standards, concerns that too much hazardous fuel has built up in these areas, and using fuels reduction treatments to reduce the severity and intensity of fire in and around old growth stands.
- Fire history and fire behavior – specific to the Myrtle Creek drainage and the Selkirk Mountains in general.
- Fuels conditions – amount and locations of currently hazardous fuels, including the conditions created as a result of the 1926 fire.
- Threatened and Endangered wildlife species – proposals consistent with requirements of the Endangered Species Act.
- Opportunities/requirements for project monitoring under a HFRA project.

Several handouts were provided for participants:

- Soils Maps – Mass Failure and Surface Erosion Potentials; Landtypes; Soil Productivity, and Sediment Delivery Potential
- Forest Plan Management Areas Map
- General Project Vicinity Map

September 16, 2004 Meeting: The purpose of this meeting was to outline agreed upon goals for the Myrtle Creek watershed, which the Working Group would then forward to the KVRI Board for consideration and then to submit them to the Forest Service. The primary goal for the watershed, as envisioned by the Joint Powers, is the ability of Myrtle Creek watershed to provide a long-term source of clean drinking water.

After brainstorming and discussing suggested goals, the Working Group agreed to the following:

- Maintain Myrtle Creek as the City's water supply.
- Maintain and restore fish and wildlife resources.
- Reduce risk of catastrophic[6] fire by fuels reduction and management.

The goals were presented at the regular monthly KVRI Board meeting on September 20, 2004, for consideration and approval and then provided to the Forest Service.

November 30, 2004 Meeting: This meeting included presentations by the Bonners Ferry Ranger District Interdisciplinary Team members about the conditions of the soils, hydrology, fisheries, wildlife, vegetation, fire and fuels in the Myrtle Creek and Snow Creek areas. Using the group's collaborative goals developed in the September meeting we had developed the Purpose and Need statements that would be used in designing and analyzing a proposal. These statements were presented to the group, as follows:

- Maintain the Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry.
- Reduce hazardous fuels in the Myrtle Creek watershed and adjacent forests.
- Trend the vegetation in the 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.

While many of the items and possible options that were discussed could be applicable throughout the watershed, the options and conditions in old growth fell into two broad landscapes: moist forest old growth in the upper watershed and dry forest old growth in the lower watershed. Considerable discussion revolved around the hazardous fuels conditions in the old growth forests. We acknowledged that all old growth forests contain fuels that burn and pose a potential risk to the watershed. However, moist forest old growth stands, such as those that total nearly 7,000 acres in the upper end of Myrtle Creek, developed under different fire regimes than the dry forest old growth stands on the south slopes of Snow Creek.

The moist and cool moist forest types have complex fire regimes. Stand replacing fires typically occurred in excess of every 200 years. However, between these stand-replacing events, low and mixed severity fire occurred more frequently (Smith and Fischer, 1997) in these forest types. In comparison, in moist forest types in the vicinity of the Round Prairie area on the District several large-diameter western larch stumps show evidence of fire return intervals from 14 to 72 years (Project File). Certainly, stand-

[6] The Working Group used the term "catastrophic" in the context of describing and including impacts on people.

replacing events were part of the natural processes in these forest types throughout the Northern Rockies. However, stand-replacing fires are not conducive to maintaining high quality drinking water in a municipal watershed.

Where dry forest old growth stands burned about every 40 years historically, moist forest old growth stands may not have burned for more than 200 years. Although both forest types pose a fire risk, the dry forest types are much more "out of whack" ecologically given fires have been excluded for more than 80 years, essentially doubling the average fire return interval for these dry forest types.

As discussed above, dry forest old growth stands (such as those in the lower Snow Creek watershed) have different fire regimes than the moist forest and have more frequent fire return intervals. (The Chapter 3 Fuels discussion in the FEIS contains additional information about the Fire Regime Condition Class in the project area.) As determined by Pfister[7] and others, "Overstocked stands with sapling/pole understories are at a high risk to stand-replacing fire, and may not have the capacity to regenerate following such fires. The appropriate treatment is to significantly reduce the density of understory and 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." (Pfister, et. al. 2000, page 15, Harvesting to Perpetuate Old Growth).

Following the discussion, the City supported focusing on the high priority stands with this project at this time, but asked that treatment of the upper portion of the watershed (including moist forest old growth) remain open for consideration during any future proposals. The Working Group agreed that treatments should only be considered in dry forest old growth stands at this time and that no fuels reduction treatments would be proposed in the moist forest allocated old growth stands in the upper portion of the watershed with this project.

January 25, 2005 Meeting: At this meeting the Bonners Ferry Ranger District interdisciplinary team[8] (IDT) brought forward an initial proposal designed around the goals outlined by the Working Group. The design of the initial proposal included approximately 2,800 acres of fuels reduction treatments. The presentation included proposed fuel reduction treatments (commercial thinning, sanitation salvage, group selection, shelterwood, and seed tree harvests) including the use of prescribed burning or mechanical piling to reduce activity fuels.

Proposed fuels reduction treatments were strategically placed based on knowledge of historic fire patterns and behavior in the Selkirk Mountains (and thus, importance of including locations in the Snow Creek area), site-specific protection of Mack Creek and Adverse Creek - critical tributaries to Myrtle Creek, and proximity to the 2003 Myrtle Creek Fire.

This proposal included more than two miles of temporary road construction (four road locations) and fuels reduction treatments in the Kootenai Peak IRA, grizzly bear core habitat and in dry forest old growth forest stands in Snow Creek. Concerns with road construction included issues surrounding roadless area values, effects on soils and effects on grizzly bear core habitat. The group was also concerned with how the proposed locations of the four temporary roads would affect the primary goal of

[7] Pfister, et.al. 2000. Contract review of old growth management on school trust lands: supplemental biodiversity guidance.

[8] Interdisciplinary Team – A group of resource specialists assigned to conduct an interdisciplinary analysis and documentation of projects proposed on National Forest System lands. Project development, analysis and design features use a multiple resource approach rather than a single resource. For the Myrtle Creek HFRA project the IDT included: Forestry, Silviculture, Fire/Fuels, Hydrology, Wildlife, Fisheries, Soils, NEPA/HFRA compliance, Transportation/Engineering, Geology, Archeology/Cultural Resources, GIS Analysis, Botany, Recreation, and others.

maintaining clean drinking water. Although the roads would provide access for additional fuels treatment areas, the roads would have traversed sensitive soils and the group felt the risk of negative effects on drinking water outweighed the potential gain in fuels reduction. Finally, the roads would be required to be decommissioned at the end of three years which is a very narrow timeline for completing fuels reduction treatments.

Based on these considerations, the Working Group asked that the roads be dropped from further consideration in the Kootenai Peak IRA and that we report back to them on the effectiveness of fuels treatments without building these roads and without treating approximately 600 to 700 acres they would have accessed.

Placement of Fuels Reduction Treatment Areas

The IDT and Working Group spent considerable time evaluating the strategic placement of the proposed fuels treatments. The following map displays the overall project area and how it was divided by areas that were burned by the 2003 fire, areas outside the 2003 fire, north-facing and south-facing slopes, and the front range (eastern aspect). We looked at each area in light of the amount of hazardous fuels, known fire behavior in the area and the purpose and need of this project.

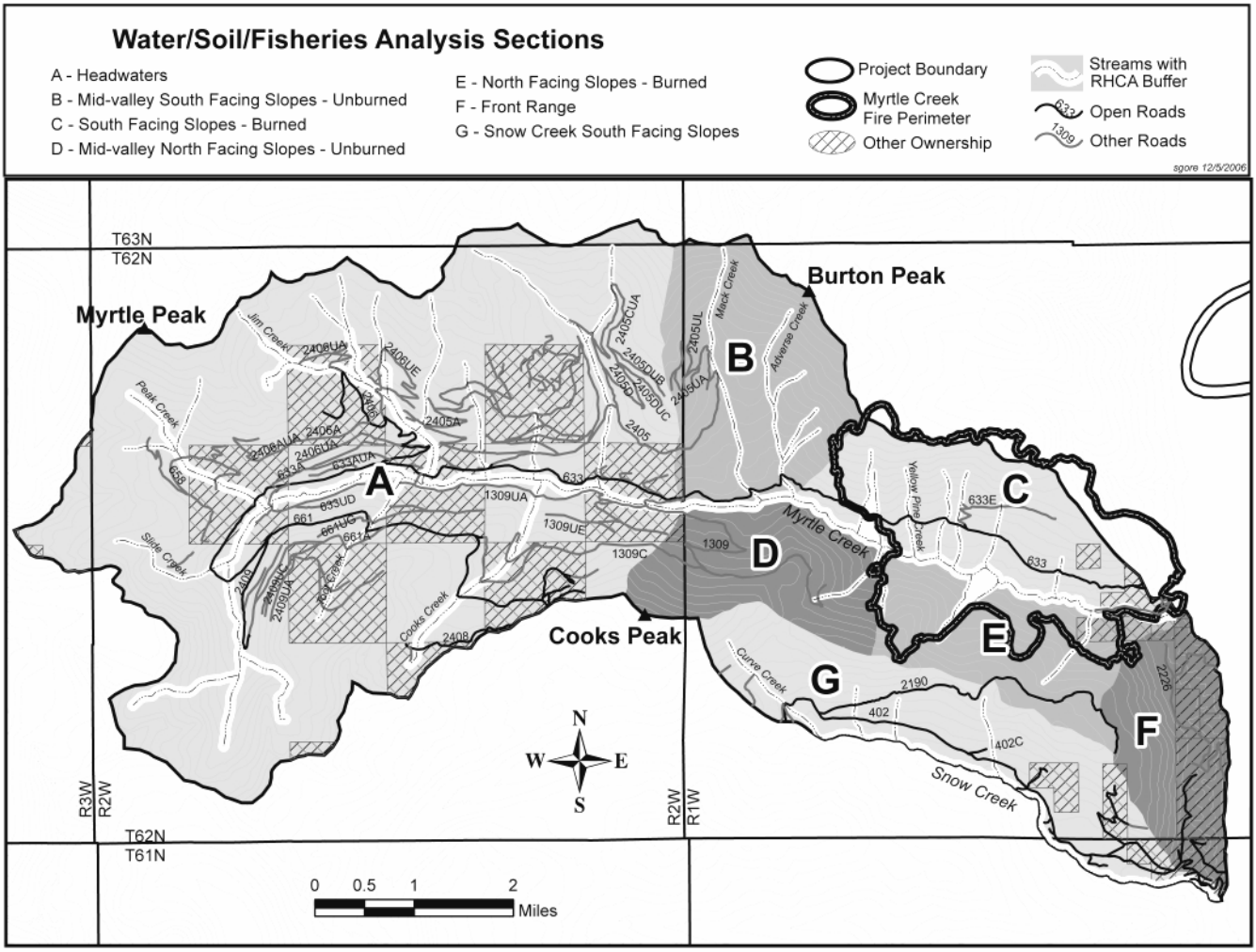

Figure 2. Project Area Analysis Sections

Directly south of Myrtle Creek on the Snow Creek side of the project area, fuels reduction treatments on the south-facing dry forest types were designed to create a fuel buffer in the event of large fire moving out of the southwest (see section G on Figure 2 map). Relatively recent fires that showed this type of movement includes the 1926 fire that started approximately six miles south of the project area and burned over 28,000 acres including portions of the project area, and the 1967 Sundance Fire that burned over 57,000 acres. Both fires moved through the Selkirk Mountains in a southwest to northeast direction – a typical pattern repeated in the local area's fire history.

Treatments on the south-facing slopes of Myrtle Creek were specifically placed to protect Mack and Adverse Creeks, major tributaries of Myrtle Creek, from uncharacteristic wildfire effects (see section B on Figure 2 map). We know from the 2003 fire that these tributaries are critical to protect, as many of the problems we are now seeing (debris and mud flows) resulted from severe fire effects in and around tributaries in the lower end of the watershed. In the event of a fire starting in the upper reaches of the drainage where no treatments were proposed, fuel treatments in proximity to Mack and Adverse Creeks were designed to be large enough to create a fuel buffer for fires moving down the canyon – like the 2003 fire did.

Units on the northern aspects of Myrtle Creek were designed to anchor into the areas of the 2003 fire that burned as a stand-replacing event (refer to Sections D, E, and F on Figure 2 map). Our concern in these areas was the amount of standing dead trees that would fall and subsequently increase ground fuel loading significantly, thereby creating a long-term potential for a severe re-burn and the subsequent negative impacts a severe re-burn could have on the watershed. We also know that these untreated north-facing slopes exhibited extremely explosive fire behavior during the 2003 fire (see section E on Figure 2 map). It was this area where the 2003 wildfire escaped beyond the incident management team's[9] initial control lines and provided the impetus for the fire to burn down the drainage and across the ridge into the Cascade Creek drainage – burning a total of approximately 3,600 acres. Based on historical accounts and 1935 aerial photography, we also know these north-facing slopes burned severely in 1926.

As the Working Group had previously recommended, no treatments were proposed in the upper watershed (Section A), and no treatments were proposed in the 2003 fire area (Section C and parts of Section E).

<u>May 17, 2005 Meeting</u>: By May 2005 the collaborative group had worked through several complex issues and they were close to supporting a proposed action of slightly less than 2,100 acres. (At the conclusion of the January 25th meeting, the withdrawal of temporary road construction in IRAs reduced the proposal from approximately 2800 to 2100 acres.) At this meeting the project had unanimous support with exception of one issue – mechanical fuel reduction treatments in dry forest old growth. At this point, the facilitator acknowledged that only Lands Council and Selkirk Conservation Alliance could not support mechanical fuels treatment in dry forest old growth. Members of these groups felt there were opportunities to meet the purpose and need of the project without mechanical treatments in this old growth. A field trip was scheduled for May 23rd to visit the stands in question and discuss treatment options. These stands are located in the Kootenai Peak IRA (section G on the preceding map).

[9] An Incident Management Team (IMT) is an "on-call" team of specialists who can be delegated authority to manage wildfires or other incidents such as floods or hurricanes. IMTs include, at a minimum, an Incident Commander, Fire Behavior Analyst, Operation and Logistics Section Chiefs, Safety Officer(s) and other members who are responsible for management of aircraft, finances, and public information, etc. IMTs are qualified as National Type I Teams, Regional Geographic Area Type II Teams, and local Type III and IV Teams depending on IMT member's experience and training. Type I Teams typically are called upon to manage the higher complexity incidents. Type IV Teams most often provide initial suppression efforts on wildfires that occur on their local unit.

May 23, 2005 field trip: The Working Group went to the Snow Creek portion of the project area to see the old growth areas first hand and discuss options in an environment that would aid in understanding. The old growth standards adopted by the Northern Region were reviewed (Green, et.al., 1992 - errata corrected February, 2005). The group had the opportunity to see first hand how the thickets of smaller trees are competing with the large trees for water and nutrients and would also act as ladder fuels in the event of a fire.

Discussions included how a wildfire start in the unnaturally overcrowded old growth stands would quickly climb the ladder fuels and become a crown fire. Crown fires are difficult to suppress and would most likely result in spot fires spreading from this area to the north into the Myrtle Creek drainage. The 2003 Myrtle Creek Fire burned more than 500 acres of similar dry forest old growth.

The old growth patches could be lost if the fuels are not treated. The objective of the treatments in the old growth was talked about – by removing ladder fuels under and around larger trees they may continue to grow, also the risk of losing them during a wildfire will be lessened. Because these are small patches embedded within larger areas where fuels reduction treatments will include the use of prescribed fire, it would be risky and difficult to use only prescribed fire in the adjacent areas without prescribed fire moving into the smaller patches of old growth. This map shows the patches of dry forest old growth (light gray areas) and their locations within the larger treatment units.

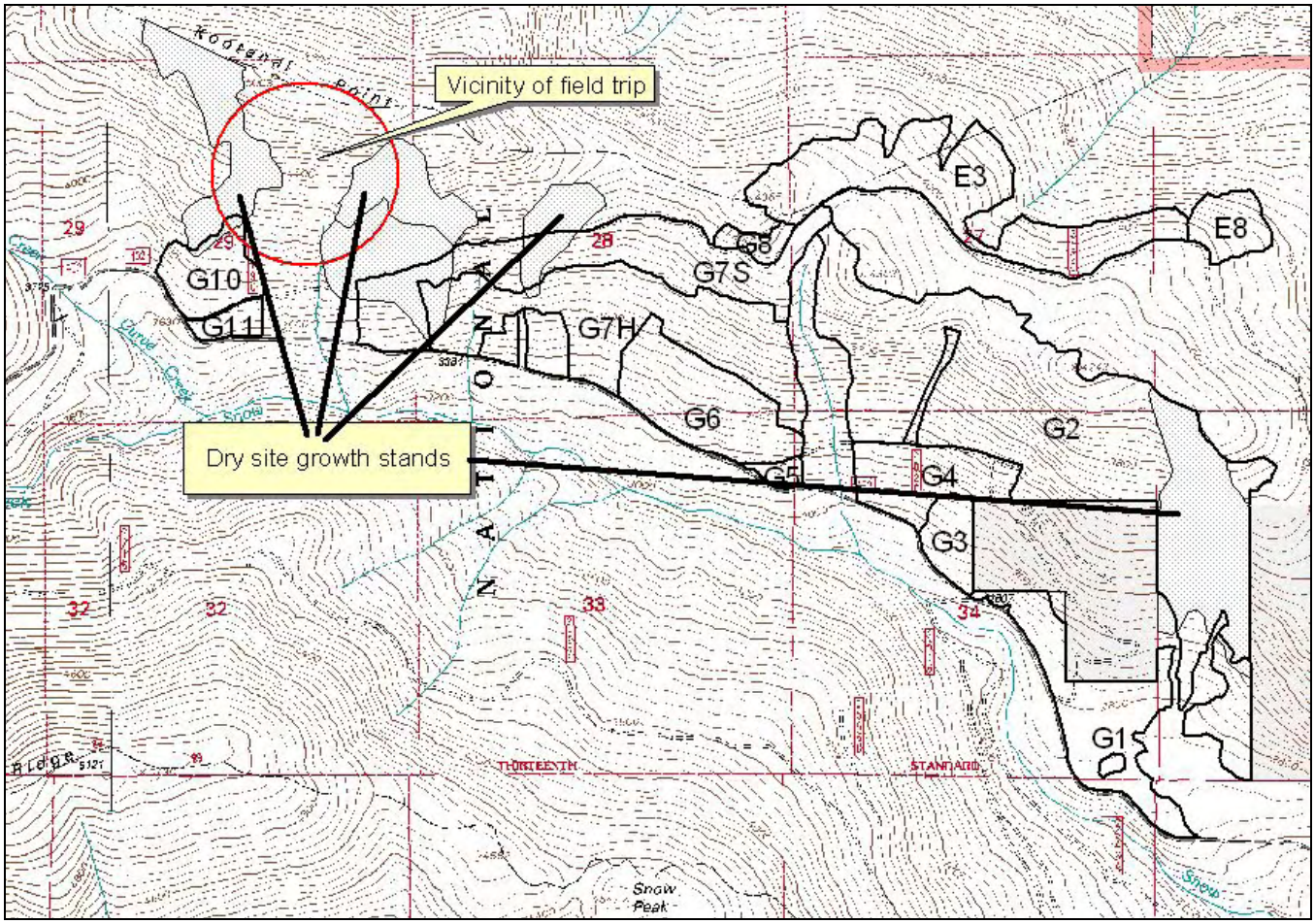

Figure 3. Fuels Reduction Treatments and Dry Forest Old Growth Areas

June 30, 2005 meeting: After the field trip the group reconvened to determine if the trip had helped resolve any issues regarding mechanical fuels reduction treatments in dry forest old growth. The conservation groups suggested a "burn only" method that would not pre-treat the area by removing ladder fuels. SCA representative cited such work done in the Sierra Nevada Mountains by the National Park Service.

Without mechanically pre-treating the area, the amount of fuels on the ground could result in an intense fire that would damage roots, causing trees to die. Scientific information provided during the meeting stated that old growth trees in these overstocked stands may succumb to stress imposed by low to moderate intensity fire (Arno, et.al, 1995)

Also, the prescribed burn would have to be conducted with temperatures hot enough to kill the majority of the seedling- and sapling-size trees (i.e. the ladder fuels) and about one-fourth of the pole- and medium-size trees. For a burn like this to be effective, the weather and fuel conditions would have to be very dry. Consequently, from the perspective of managing such a prescribed burn, the risk of an escaped fire would be unacceptably high, especially when it could burn into the municipal watershed.

At the close of the meeting members of The Lands Council and SCA felt they could support most of the project (with the exception of mechanical fuels treatments in old growth). For the record, the facilitator acknowledged the minority opinion position of these groups, but also acknowledged the general consensus and support of the project from the majority of the Working Group. The facilitator explained to the group that she would inform the KVRI Board that there was general consensus from the Working Group, but that Lands Council and SCA could not support the proposal with mechanical fuels reduction treatments in dry forest old growth.

KVRI Support Letter: In an August 3, 2005 letter the KVRI Board, through the Joint Powers, acknowledged their strong support of the project. "…Because of a wildfire… in the Myrtle Creek drainage in 2003 – it was realized that management to reduce fuels and thereby provide a level of protection to the municipal watershed was critical. … The KVRI Board is in strong support of the project. The Board's support includes the caveat that photo monitoring of old growth stands be conducted before and after the project to determine effectiveness of management tools and provide for an adaptive feedback loop. Should the project alternative be changed through the Forest Service public process, the KVRI Board requests opportunity to review any changes and determine continued/future project support."

Release of the Draft EIS

The development and analysis of this project included more than a year of collaboration with the Working Group and additional public scoping.

- 74 persons attended one or more meetings of the Working Group (see list in Table 4)
- 30 additional people were on our mailing/contact lists
- May 2006 Draft EIS provided to interested parties and posted on our public website.

We received comments from environmental groups questioning treatments in dry forest old growth, grizzly bear core habitat and mechanical fuels treatments in IRAs. Many came from groups, including the Idaho Conservation League and The Lands Council, who participated in the Working Group process that helped shape the proposed action.

We also received letters of support from local citizens as well as the Upper Columbia United Tribes (Coeur d'Alene, Colville, Kalispel, Kootenai, and Spokane), and from the co-chairs of KVRI – in which they reaffirmed their support. State and federal agency comments included the EPA who's review assigned a rating of Lack of Objections to the DEIS.

August 1, 2006 KVRI Support Letter: In July 2005, the 11-member KVRI Board had agreed, by consensus, to support the project. In an August 1, 2006 letter to Regional Forester Gail Kimball the Joint Powers reiterated their support for the project. Stating, "... after working together to review and understand the landscape and technical aspects involved – the group [Working Group] determined the best project should include approximately 2,100 acres in order to provide treatment in priority areas utilizing methods that would not require construction of temporary roads in roadless areas. This also included a compromise agreement on two old growth units. … We strongly encourage you to move ahead with implementation of the Myrtle Creek HFRA project."

August 14, 2006 Working Group Meeting: About a month prior to this meeting, the facilitator had provided members with electronic copies of comments received on the DEIS. This meeting was held so the Forest Service could present a summary of the comments, update the group concerning some fine-tuning and ground-truthing of the proposal, and outline the next steps prior to releasing the Final EIS. Members of the Lands Council and Idaho Conservation League asked the group to consider the organizations' concerns regarding entry into IRAs. No new information was brought forward during this meeting.

The KVRI Board and the Joint Powers recommendations and support of the project remained unchanged, as shown in their August 1st letter to the Regional Forester. We explained to the group that if changes to the proposed action were to be considered, or a new alternative developed, it would be as a result of public comment on the DEIS and through the HFRA/NEPA process would be analyzed and documented in the Final EIS.

Addressing Comments on the DEIS: While the issues had been amply discussed during the Working Groups meetings and field trips, based on comments received on the Draft EIS, I asked the IDT to look at an alternative that would exclude fuels treatments in dry forest old growth, grizzly bear core habitat, and entry in IRAs. This became Alternative 5 in the Final EIS and it was analyzed to determine how well such an alternative would meet the Purpose and Need, which is:

- Maintain Myrtle Creek as the municipal water supply
- Maintain and restore fish and wildlife resources
- Reduce risk of catastrophic fire[10] by fuels reduction and management

I have determined that Alternative 5 partially met the Purpose and Need in the short-term (if we did not experience another fire similar to the 2003 event), by protecting water quality; but, *in the long-term this alternative does not treat enough hazardous fuels to reduce the risk of uncharacteristic unwanted wildfire and the potential effects this type of fire would have on the municipal water supply*. It would treat less than 100 acres of hazardous fuels in the Myrtle Creek watershed.

Release of the Final EIS and Filing of Objections

- March 26, 2007: public release of the Myrtle Creek HFRA Project Final EIS, included posting on the IPNF website.
- April 9, 2007: legal notice of release of the Final EIS was published in the newspaper of record (Coeur d'Alene Press)
- May 9, 2007: the period for filing an objection closed.
- June 11, 2007: the Reviewing Officer provided written responses to the Objectors.

[10] "Catastrophic" as used by the Working Group includes a fire's effects on people.

Objections that met requirements of the HFRA administrative review (objection) process were filed by:

- Idaho Conservation League in conjunction with The Wilderness Society, and
- The Lands Council in conjunction with the Selkirk Conservation Alliance, Kootenai Environmental Alliance, and WildWest Institute.

The objections could not be resolved at the local level.

The Regional level review classified the objection items into two categories:

- Violation of environmental laws, regulations and policy; and
- HFRA-specific concerns related to this project.

The Reviewing Officer's findings were:

- The issues were addressed in the EIS and project record, and the project is in compliance with existing laws, regulations and policy; and
- The project clearly demonstrates compliance with the Healthy Forests Restoration Act.

In the responses to the objectors, the Reviewing Officer encouraged me as the Responsible Official to continue a dialogue with the objectors concerning the Idaho Conservation League's request that a multiparty monitoring group be developed in relation to the Myrtle Creek HFRA project. At this time there is agreement for multi-party monitoring of treatments in dry site old growth areas and photo points have been established and initial conditions documented. I am open to having further discussions concerning monitoring. We will, however, first need to get the Myrtle Creek project moving forward.

Appendix A of this Record contains the substantive portions of the objections and the responses by members of the Interdisciplinary Team and others involved with this project.

June 4, 2007 field trip: Given the concerns of the groups, which now centered mostly on mechanical fuels treatments in IRAs, I orchestrated a field trip with the Joint Powers and representatives of the groups that had filed objections to the FEIS. The objectors' main concerns related specifically to the *scale* of mechanical fuels treatment in IRAs, in other words how many *acres* were being proposed for mechanical treatment and the *number* of trees per acre and *size* of trees proposed for mechanical removal in IRAs.

Offers to participate were made to the lead objectors (The Lands Council, The Wilderness Society and Idaho Conservation League). The field trip was attended by representatives of The Lands Council, Idaho Conservation League, Wilderness Society, Jerry Pavia, the Joint Powers, and Forest Service personnel. Members of groups who objected in conjunction with The Lands Council were represented by The Lands Council, but were not present (WildWest Institute, Selkirk Conservation Alliance, and Kootenai Environmental Alliance). As part of the trip we requested that Dr. Russ Graham from the Rocky Mountain Research Station, Dr. Art Zack, IPNF Forest Ecologist, and Ron Hvizdak[11], Fire Behavior Analyst with the National Incident Management Team assigned to the 2003 Myrtle Creek Fire, join the discussion to go over specific concerns raised in the objections. Graham, Zack and Hvizdak could also provide insight regarding fire ecology, fire behavior, and the effectiveness of various fuels treatments. *The current concern in watersheds like these is high fire severity*.

[11] Ron Hvizdak was the Fire Behavior Analyst on a National Type I Incident Management Team for several years, during which their assignments included the Hayman Fire in Colorado in 2002, and the Boundary Fire which re-burned an area of Yellowstone National Park in 2000.

Dr. Graham[12] explained at length that effective fuels treatments should maintain considerable landscape diversity and that "variety is the spice of life" when it comes to selected treatments. He talked specifically about free selection prescriptions that he has applied in the Northern Region incorporating this type of variability. He also stated that the focus of treatments in a watershed like Myrtle is to reduce how hot (how intense and severe) the fire burns across the landscape. When questioned about the Hayman Fire[13] in Colorado and its after effects, he clarified that looking only at the burned trees did not provide an accurate assessment of the consequences of that fire. One needs to account for the negative effects to the soils and the fact that there was less damage in the areas that had been treated before the Hayman Fire.

Ron Hvizdak informed the group that in his more than 30 years of fire experience in the Northern Rockies, stands of young western larch, much like those that will be developed in the proposed action, were some of the most fire proof stands in this region. Mainly due to larch's adaptation with fire – thick bark, absence of lower limbs, and lighter more open crowns. He also covered his experience with fuel loadings in these stands and his analysis in predicting fire behavior during the 2003 Myrtle Creek Fire. Based on his observations and experience, Ron concluded that there would be an incredible risk and difficulty in attempting to use fire-only in these stands without first pre-treating them with mechanical fuels treatments.

Dr. Zack talked about the considerable variability in fire history in the local area. He described the evidence of past fires and estimates of fire frequency, stating that fires can not be kept out of an area of this size. The outcome of the fuels treatments planned for the project will be fires that burn cooler and cause less disruption to an area – fires that would be more acceptable in a municipal watershed.

Although there were some good discussions throughout the day, no resolutions were reached. There was general agreement that treatments were needed in the watershed. When asked, the groups who filed objections supported differing levels of fuels treatments in IRAs. Lands Council supported the use of prescribed fire and some level of mechanical treatments, but they were not specific regarding the level of treatment they would support. Idaho Conservation League (ICL) supported the use of prescribed fire, but they were non-committal with respect to the use of mechanical treatments. Wilderness Society, who filed an objection in conjunction with the ICL, supported the use of prescribed fire only.

The Joint Powers did not waiver from their strong support of the proposed action as described in the FEIS as they believed considerable time and opportunities had passed in the process for the objecting groups to provide the Working Group with their position on treatments in IRAs.

I informed the entire group that although the objection period did officially close on May 9, 2007 we would continue to work with any members of the group to resolve issues' surrounding the proposal until the Record of Decision (ROD) was issued later in the summer. Specifically, I asked those groups who had filed objections to clarify their positions regarding fuels treatments in IRAs. The Mayor reminded the group that the project has always been about *clean water* and what fuels treatments would best reduce the risk of uncharacteristic unwanted fire in the watershed.

Meanwhile, I asked my staff to seriously consider the comments provided by Dr. Graham, Ron Hvizdak, and Dr. Zack with respect to proposed prescriptions in the Final EIS. I asked them to look at prescription adjustments that could address concerns raised in the objections, but would not compromise the primary purpose of the project.

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[12] Russell T. Graham, PhD. Research Forester, Rocky Mtn Research Station, Moscow, Idaho.

[13] Dr. Graham was the Case Study Leader and Technical Editor of the Hayman Fire Case Study, General Technical Report RMRS-GTR-114, Sept. 2003, Rocky Mtn Research Station, USDA Forest Service.

June 11, 2007: the Reviewing Officer provided written responses to the Objectors

Suggested Prescription Modifications

On June 15, 2007 we received suggested prescription modifications, only for treatment units in IRAs, from Idaho Conservation League and The Wilderness Society. Their proposed modifications included mechanical treatments along road corridors which they termed *defensible space* treatments and the use of prescribed-fire-only beyond these *defensible space* areas. According to the suggested modifications:

- The width of the defensible space treatments would vary from 66 feet to 208 feet, depending on slope conditions.
- In general, removal of fuel in these areas would be restricted to diameter limits of less than 10" diameter at breast height (dbh), and in some cases less than 8" dbh, and would be done without the use of mechanized harvesting equipment.
- In one unit which does not border a road, no mechanical removal of fuel was suggested.
- On the perimeter of all treatment areas some chainsaw thinning of trees less than 8-10" dbh would occur to create a fuel bed, although no width of these perimeter fuel breaks was discussed.
- There would be no additional mechanical fuels treatments on the interior of these units.
- The entire unit would be treated with prescribed fire, beginning along the perimeter fuel break, down slope through the untreated interior of the units, and into the *defensible space* corridor along the road.

Later, as an Objector, Mike Peterson (Executive Director of The Lands Council), met with the Forest Service, Mayor Kerby, and Boundary County Commissioner Dan Dinning to discuss TLC's position with respect to treatments in IRAs. Peterson informed the group that TLC had been in discussions with Idaho Conservation League (ICL) and The Wilderness Society (TWS) and they supported the suggested prescription modifications submitted by ICL and TWS. Mayor Kerby and Commissioner Dinning, speaking for the Joint Powers, including the Kootenai Tribe of Idaho, emphasized that their interest was to see Alternative 2 in the FEIS, developed through the collaborative process, implemented as proposed. It was their wish that TLC could find some way to support the proposed action.

Consideration of the Suggested Prescription Adjustments

I asked my staff to objectively assess the effectiveness of the suggested prescription modifications compared to Alternative 2 developed through the collaborative group. They concluded that the defensible space buffers, where excess fuels would actually be removed from the stands, would modify fuel structures along the roads in a manner that would alter fire behavior to acceptable levels in these buffer areas. However, beyond these defensible space buffers, where no mechanical removal would occur in the units, it would require an extremely ambitious and risky prescribed burning program, over a considerable length of time, to "remove" the same amount of fuel the prescriptions in Alternative 2 would remove in one treatment. Keep in mind that the terminology "defensible space" is normally accepted as a concept that applies to homes, commercial buildings and other structures and as such does not apply to our proposal. The objectives of this project involve reducing fuels with treatments in specific areas relative to the landscape and the known patterns of wildfires in the Selkirk Mountains.

The risks associated with such an ambitious burning program are primarily two fold:

- First, the risks of being able to apply prescribed fire operationally within the municipal watershed without having the fire create more problems than the intended cure. In order to kill, or "remove", the amount of fuel necessary to alter the existing fuel structures the prescribed fire would have to be hot enough to kill trees larger than three inches dbh. Fire managers would

incur considerable risk when applying fire with these intensities and it would be difficult to keep this type of fire from torching and spotting beyond containment lines.

- Secondly, assuming the prescribed fire was successful in the short-term; eventually the trees killed in each successive prescribed fire would fall to the ground and create subsequent potential for an unintended severe re-burn during normal wildfire seasons. This may be an acceptable risk in other watersheds, but not in one that provides drinking water for more than 4,200 citizens.

While non-mechanical treatments are possible, as explained earlier their use is too risky in these areas and especially in a municipal watershed.

Why Look at a Project In This Location?

Since 1928, the Myrtle Creek drainage has served as the municipal watershed for the City of Bonners Ferry, delivering high quality drinking water via a cost-effective gravity-fed system. The City's water system is the primary source of water for approximately 4200 people in Bonners Ferry, commercial and industrial users within the city limits, and facilities of Boundary County including schools, hospital and Restorium, and the Kootenai Tribe of Idaho's tribal headquarters. The Tribal facilities include administrative and business offices, 26 residences, Tribal health clinic, Tribal Court, fire substation and fire fighting equipment, and a hatchery (including administrative offices and residence) for the endangered Kootenai River white sturgeon.

Myrtle Creek is the primary and preferred source of municipal water for several reasons.

- The geology of the Kootenai River Valley does not lend itself to development of wells with a capacity sufficient to serve the community.
- Neither the Kootenai River nor Cabinet Mtn. Water District can meet the City's needs for more than short-term emergency back-up situations. During times of peak water usage these sources would fall far short of demands[14], which would result in water rationing, and ultimately, the City's fire suppression water storage could be compromised.
- Use of the Cabinet Mtn Water District is contingent upon the availability of the water district's excess water.
- Providing water from the Kootenai River is significantly more costly because the water must be pumped from the river into the water treatment plant. In addition, the river water requires a different filtering process than water from Myrtle Creek.
- The Kootenai Tribe of Idaho desires to maintain the use of their historic source of water.

Because of its importance to the community, the Myrtle Creek watershed was identified in Boundary County's Wildland/Urban Interface Fire Mitigation Plan (Community Wildfire Protection Plan) as a high priority. As stated in the plan, "Boundary County is extremely dependent on surface waters for domestic purposes. This dependency includes residents of the City of Bonners Ferry. …Protection of water sources and water quality is a high priority." (Boundary County, August, 2003; Amendment 1, February, 2004.)

[14] Historic peak usage is 2.2 million gallons per day. Myrtle Creek source is currently capable of supplying 2.4 million gallons per day. The system that pumps and filters water from the Kootenai River is capable of approximately 1.4 million gallons per day, while the tie-in with Cabinet Mtn water district could provide approximately 0.35 million gallons per day contingent upon the availability of excess water. (City of Bonners Ferry letter dated 5/21/2007)

Municipal Watershed and Water Quality Concerns

Important concerns are:

- The Myrtle Creek Fire of 2003 increased the water quality/hydrologic sensitivity of the municipal watershed in regards to future wildfires and after effects of the 2003 fire continue to impact the City's use of Myrtle Creek as a water source.
- The community has identified a goal for, there is local support for, fuels reduction in the Myrtle Creek municipal watershed.
- The County's wildfire mitigation plan recognizes the need to reduce fire-related threats in the municipal watershed. Fires in the Myrtle Creek project area[15] during the typically hot dry summer months, when more than 85 percent of local fires occur, could potentially lead to detrimental effects to the municipal water.

Myrtle Creek is a long perennial stream within a glaciated valley with frequent tributaries; the main channel is in fair to good condition with fair to good stability. However, road drainage structures, such as culverts, are common sites of ongoing or potential erosion and sediment sources. When debris flow plugs a culvert, runoff water can be concentrated over the top of the road fill rather than flowing through the culvert as designed, or the water may be diverted down the road or ditch line and onto hillslopes unaccustomed to a concentrated flow. Both scenarios can produce large concentrations of sediment, which in turn can affect water quality and turbidity. Many of the drainage relief culverts and stream crossings in the Myrtle Creek watershed have been in use longer than they were expected to last, increasing the need for and importance of upgrading roads.

Tributaries to Myrtle Creek drain the slopes above the valley and are frequently deeply incised and ephemeral. Flows from them can be intense but of short duration as a result of individual weather events. Spring snowmelt runoff may last many weeks. Occasionally, long duration Pacific rain storms saturate soils and can result in large scale flooding and related channel adjustments. In the Pacific-maritime influenced climate of this area, these storms can occur after the snow pack has accumulated, adding to the magnitude of the response.

When high intensity storms take place after wildfires, the combination can cause scour of the intermittent (ephemeral) channels and add large amounts of new sediment to downstream lower gradient reaches. (See Figures 8-a, 8-b, 8-c and 9 for examples of events that have occurred within the area burned by the 2003 wildfire.) Although there is erosion of banks and sediment transport in some reaches, the system has been able to accommodate and contain the resulting energy and material. However, the Myrtle Creek Fire increased the sensitivity of the watershed. In the event of future fire(s), the additive impacts would be greater than what would have occurred if the area had not experienced a large wildfire in 2003.

Hazardous Forest Fuels, 2003 Wildfire, and Existing Wildfire Threat

The wildfire threat to the project area and the Myrtle Creek watershed is not speculative. Nor are the consequences of unwanted fire within the area. As I explained earlier, in September 2003 a wildfire burned approximately 3,400 acres in the lower portion of the watershed. More than two-thirds of the area burned with moderate or high severity. In 1926, a fire moved from the south across Snow Creek and into the Myrtle Creek watershed; burning nearly 6,000 acres of the project area. (See Figure 17 for a map of these fires.) After-effects of these wildfires (most recently observed to varying degrees across

[15] As defined in the Final EIS, the project analysis area includes the Myrtle Creek watershed and a portion of the Snow Creek watershed. See **Figure 1** – Vicinity Map.

the area burned in 2003) include the loss of vegetation, and creation of hydrophobic soils. Hydrophobic soils can accelerate erosion, lead to mass failures, damage roads, result in debris that plugs culverts, and add sediment to streams.

The 2003 wildfire burned across the City's intake diversion structure (see Figure 4). Short-term effects to the quality of the water made it necessary for the City to switch to their emergency backup water source for several days. Even when the water met State drinking water quality standards, it continued to smell and taste like smoke for about a month.

Figure 4. Myrtle Creek Intake Structure after the 2003 fire

As seen in the following photos, erosion following wildfires has the potential to create sediment which can reach streams.

Figure 5. Fire Effects – Loss of Vegetation and Bare Mineral Soils – Myrtle Creek Fire 2003

As shown in Figure 5 (left), crown fire consumed most of the trees and surface organic matter leaving soils exposed to the elements. Myrtle Creek is at this bottom of the slope (visible through the trees at the top of the picture).

Burned Area Response Work

Assessment of the burned area began as soon as it was safe for resource advisors and specialists to enter the area. An effective Burned Area Emergency Response (BAER) effort completed in the fall of 2003 (October) provided protection to soils in some areas over the winter and during spring runoff.

Numerous cross drains were installed on the main Myrtle Creek Road #633 in anticipation of increased runoff and to reduce the potential of debris or sediment plugging culverts. Straw mulch was applied to steep burned slopes to keep the ash, nutrients, and soil onsite until vegetation returns and the roots can begin to anchor the soil. See Figure 6.

In an effort to stabilize the soils that had been exposed by the fire, the BAER plan also called for aerial mulching with chopped straw (Figure 7), hydro-seeding by aircraft, and hydro-seeding by ground-based equipment in high priority areas.

The photo at left shows a portion of the hillsides where straw mulch was used to help reduce effects of the fire.

Figure 6. Straw mulching in the burned area.

The photo at right shows a small single engine air tanker (similar to a crop dusting plane) applying hydroseed slurry during the BAER work.

Total cost of the BAER work was approximately $1.3 million.

Figure 7. Aerial application of hydroseed – Myrtle Creek Fire, 2003.

Continuing Consequences of Wildfire in the Watershed

The BAER work was beneficial and met many objectives of reducing impacts from the 2003 fire, but one significant outcome of that fire is an increased hydrologic sensitivity in the watershed.

The City of Bonners Ferry has been forced to shut down the Myrtle Creek water intake facility and switch over to emergency backup sources four times during the past four years (personal communication, Chuck Lycans – City of Bonners Ferry, 7/23/07). There are still concerns about the consequences of having a second severe fire in the watershed.

July 4, 2004: A localized storm with more than 1.5" rain in a two-hour period resulted in a high volume of water and a debris torrent in the Yellow Pine tributary to Myrtle Creek. The Yellow Pine basin was untreated prior to the 2003 Myrtle Creek Fire (See Figure 8 series of photos.) Following this storm event, the City had to temporarily switch to a backup water source.

Figure 8. Yellow Pine Photo Series

This series of four photos present an aerial view of Yellow Pine Creek shortly after the 2003 fire burned through the area, and the damage in the area the next spring.

Figure 8-a. Yellow Pine Burned Area, 9/03.

The "black area" to the right of center in Figure 8-a shows the upper basin of Yellow Pine Creek where the 2003 fire burned very hot and created hydrophobic soil conditions. Soils that essentially acted like asphalt during the storm. Instead of filtering into the soil, the water ran overland as it came down from the headwaters of the stream and scoured out the channel.

Figures 8-b through 8-d show the debris and mud flow as it reached and crossed the main Road #633. Forest Service personnel estimate about 115 tons of dirt and debris were trapped in the open top culvert. However, water and mud did flow across the road and sediment did get to Myrtle Creek.

Figure 8-b. Yellow Pine just above crossing on Road #633 – July 2004

Figure 8-c. Debris Flow and Open-Top Culvert. Photo taken from east side of culvert, just below Figure 8-b. (July 2004)

These photos show others views of the debris flow seen in Figure 8-b. Note the dead trees at the top of Figure 8-b are visible in the background of Figure 8-c. For the next view (8-d), those dead trees are out of the scene on the left side of the photo. The open-top culvert and yellow indicator sign at the edge of the culvert are seen in Figures 8-C and 8-d.

Figure 8-d. Debris Flow on Left, Downfill Flow and Shoulder Cutting on Right. Photo from west side of culvert (July, 2004).

March, 2007: Weather-related events again led to debris torrents, slides and erosion in ten locations within the burned area as shown in the next two photos. The storm and subsequent erosion delivered sediment to Myrtle Creek.

This photo shows a very large flow of debris and mud that originated in the upper portion of the drainage of an unnamed tributary east of Yellow Pine Creek. Myrtle Creek Road is in the center and center/right of the photo.

The debris flow not only carried mud and broken tree trunks across the roadway, it was powerful enough to move the large boulder to the middle of the road and deposit sediment in Myrtle Creek.

Figure 9. Debris and Mud Flow, Myrtle Creek Road - March 2007

The Bonners Ferry Ranger District has issued a contract at a cost of more than $25,000 to repair road damage after the events of winter 2006 and spring 2007 and to lower the risk of further sediment reaching Myrtle Creek.

Figure 10. Overland debris and mud flow at about 3.5 mile on Myrtle Creek Road - March 2007

Why Is This Project Needed At This Time?

Hazardous Forest Fuels and Existing Wildfire Threat

Three main factors influence behavior of wildfire – weather, topography, and available fuels. The only one of these that land managers can modify or control is the available fuels.

Weather: The general climate of the area is cool-moist with a Pacific maritime influence. Springs tend to be wet through May and June which can lead to lush growth of grasses and herbaceous plants. Summers tend to be very warm and dry, leading to periods of Very High to Extreme fire dangers from August through early September.

Topography: The Myrtle and Snow Creek drainages are oriented with the prevailing wind direction, which may aid in fire spread. The steep slopes on both sides of Myrtle Creek can influence fire behavior by affecting local winds and contributing to pre-heating and drying of fuels upslope from an active fire.

Available Fuels: The current conditions of the fuels in the dry forest types would support intense and severe fire – including crown fire. This is discussed in detail in the vegetation and fuel loadings portion of this section.

This project is being implemented at this time for the following reasons:

- Fire history and fire behavior in the project area and Selkirk Mountains.
- Current vegetation is trending away from sustainable conditions and heavy fuel loadings in the project area are undesirable.
- The 2003 fire has the potential to re-burn and will become less effective as a fire buffer with each passing year. Over time the standing dead trees will fall, providing surface fuels that could create a hot fire with severe effects to the soils and the remaining live trees.

Fire History and Behavior

Archived fire data and historic newspaper accounts tell the story of relatively frequent wildfires in and near the project area. However, successful fire suppression has caused missed fire return intervals on dry forest types – altering the historic fire frequency, fire severity and natural fire regime. Recent estimates show an historic average fire return interval of approximately 40 years (Behrens, 1999). Until the Myrtle Creek Fire of 2003, however, there had been no large fire event in the project area since 1926 – making the latest fire return interval 77 years in the dry forest areas of Myrtle Creek and 81 years in Snow Creek.

The 2003 Myrtle Creek Fire is a good example of a fire in heavy, abundant, and generally continuous fuels. The fire exhibited high intensity crown fire in untreated stands of trees. It is reasonable to expect the same thing to happen in the remaining untreated stands in the project area under similar conditions. The 1967 Sundance Fire started September 1st and at one point in time grew from 4,000 acres to nearly 56,000 acres in 12 hours burning across the entire Pack River drainage and to the north across other areas of the Selkirk Mountains, threatening Bonners Ferry. During the period of the fastest rate of spread, the fire burned at a rate of *one square mile* (640 acres) *every six minutes* and produced a column of smoke rising 35,000 feet into the air (Intermountain Research Station paper INT-56, *Sundance Fire*, Anderson 1968).

Current Vegetation and Fuel Loadings

Within the analysis area in all forest types, dense stands of shade-tolerant fire-intolerant trees are setting forests up for wildfires that could exhibit high resistance to control and would require greater numbers

and types of fire suppression resources to suppress the fires. These forests generally have vegetation conditions that seem conducive to such fire behavior and the potential for intense, severe, "hot" fire – low growing crowns and other ladder fuels, dense tree canopies, and high amounts of litter from fallen trees, broken limbs, fallen needles, etc.

Figure 11 shows the typical heavy load of hazardous fuels in moist forest areas selected for treatment. Ladder fuels and tree spacing in Figures 11 and 12 have similar conditions and potential for crown fires.

Figure 11. Typical fuels conditions in moist forest sites.

Surface Fuels: In these sites, surface fuels are abundant, trees are close together. The major contributor of fire spread on the surface would be dead material less than 3 inches in diameter (including cured grasses and brush) that dry out quickly and ignite and burn rapidly. These stands also have heavy surface fuels greater than 3 inches in diameter which aid in fire spread, but are generally associated with prolonged burning and smoldering contributing to fire severity, soil and aquatic damage and tree mortality and impact air quality.

Ladder Fuels: These sites also have excessive smaller trees (ladder fuels) that provide a route for fire to spread from the surface fuels into the ladder fuels and potentially into tops (crowns) of trees. Analysis shows that fires in the treatment areas would have a potential flame length of approximately 29 feet, greatly increasing the possibility of a crown fire. Crown fires are a concern because they exceed conditions that can be safely and effectively fought by hand crews and other direct attack tactics. (Fires with flame lengths greater than four feet are considered beyond direct attack capabilities.)

Figure 12. Typical ladder fuels – Dry Forest Restoration units.

The shade-tolerant species that are increasing in these dry forest areas are much less resistant to fire, insects and diseases than the long-lived seral species they have replaced (FEIS, pg 3-57). Historically in dry forests, frequent fires would have consumed the ladder and surface fuels creating a landscape mosaic that was less likely to burn with high severity.

The Dry Forest Restoration treatments in this project are designed to create a mosaic of forested openings and thinned areas that will favor the retention of the largest existing ponderosa pine, Douglas-fir and larch. The risk of stand-replacing crown fires will be reduced. (FEIS, pg. 2-15)

Figure 13 shows a stand similar to the one in Fig. 12, following treatment. Treatment in this dry site stand removed the smaller trees and included a follow-up underburn. Threat of a crown fire was reduced and the resilience of the remaining large trees was improved making them more resistant to drought, insects and disease.

Figure 13. Example unit following treatment – Dry Forest Restoration

Tree Spacing: In Figure 13, notice the lack of ladder fuels and the wider tree spacing after treatment. While it would be expected that cured grasses and shrubs would carry a surface fire through such a stand, the removal of ladder fuels and wider spacing of tree crowns has made a big reduction in the possibility of a crown fire. Even if torching of individual trees or groups of trees occurs, with adequate tree spacing, the risk of a crown fire spreading from tree to tree is virtually eliminated.

Crown fires burn with the greatest fire intensities (flame lengths) and greatest spread rates. *Without treatment* ladder fuels in the project area are a particular concern because they create a way for surface fires to move into the tree crowns. In turn, dense overstories with heavy canopy fuels have created an environment where active crown fires can spread. Crown fires can be unpredictable and they create a condition that severely limits fire suppression capabilities and increases the risks to firefighters, the public, and natural resources.

The ability to reduce fire-related threats and unwanted effects to the watershed includes the important ability to suppress future wildfires before they grow to a large scale. Analysis of the proposed treatment areas shows that existing conditions would result in wildfires that would exceed the limits of direct attack by hand crews, taking away tactics that are the safest and most efficient ways to accomplish the goals of fire suppression.

Potential for Re-burn – Conditions in the Area Burned by 2003 Wildfire

The Myrtle Creek Fire of 2003 resulted in an increased sensitivity within the watershed. Over time within the burned area, the standing dead trees will fall over and often create a heavy surface fuel load, in many cases probably heavier than before the fire. Thus, the burned area has a potential to reburn – a potential that increases with each passing year. Not only could the area reburn, it will not provide an effective fuel buffer against future fires that could move into the area from further up the Myrtle Creek drainage, or fires coming over from the Snow Creek drainage – both typical, well documented scenarios in this landscape.

Figures 14 and 15 (next page) were taken in Yellowstone National Park. Notice the dead trees and down logs killed by the initial fire that burned in 1988 and how such an area looks after heavy surface fuels were allowed to accumulate. This may be acceptable in the backcountry, such as within a National Park, but it constitutes a serious fuel hazard in a municipal watershed.

Figure 14 shows the amount of fuels that can build up in areas that are not treated following a wildfire. Trees that suffer fire-caused mortality fall to the ground. Trees that are now growing on the site can be closely spaced. Grasses and shrubs, as well as small diameter dead material, increase fire intensities and spread rates while the larger diameter dead trees contribute more to fire severity than intensity.

Figure 15 shows an area with similar conditions that was part of a re-burn in 2000.

This photo was taken in an area burned by a fire in 1988, but outside the area of the re-burn in 2000, to show conditions that affected the severity of the re-burn fire. These re-burn fires are burning intensely for a long duration in the dry summers and leaving very little organic matter.

Because they burn for a longer time and can continue to smolder, the larger diameter surface fuels as seen in this photo, can also lead to decreasing air quality.

Figure 14. Surface Fuels in an Area Not Treated after a Wildfire (Yellowstone NP, 1988)

Figure 15. Effects of a Reburn (Yellowstone NP, 2000)

The re-burn fire[16] occurred on flat ground consuming nearly all fuels and left the surface bare. Small trees are just dead, blackened sticks. The severity resulted in effects to soils that one would not want in a municipal watershed.

The steeper slopes and other topographic factors in the Myrtle Creek Fire area would add to the intensity and severity of a re-burn in that area. Within the project area, the original plans called for prescribed fire cycle about every 20 years. The Myrtle Creek Fire in 2003 changed those plans. We anticipate we will need to begin prescribed burning within the next 10 years or so to begin reducing the anticipated fuels in the burned areas.

[16] Boundary Fire, Yellowstone National Park, 2000.

Section 3. Reaching My Decision

As Forest Supervisor, I must make a decision that ultimately weighs the risk of undertaking any action or no action in protecting and maintaining the drinking water supply for the City of Bonners Ferry, Idaho and the Kootenai Tribe of Idaho. HFRA specifically provides for a community-based public collaboration forum to address issues at all levels, including national issues with local implications. My decision comes after three years of broad public debates, collaboration and rigorous analysis incorporating the best available science and outreach to experts and scientists in the field.

A fuels reduction project was proposed, analyzed, and will be implemented in the Myrtle Creek HFRA project area in light of the following:

- The Myrtle Creek drainage is the municipal watershed and primary source of water for the City of Bonners Ferry. Not only is it the historic source, the community and Kootenai Tribe of Idaho have expressed their desire to continue using Myrtle Creek watershed as their primary source of municipal water.
- The municipal watershed is listed as a priority for fuels reduction treatments in the Boundary County Wildland Fire Mitigation Plan.
- Recognition of the request from the Joint Powers[17] (City of Bonners Ferry, Boundary County, and the Kootenai Tribe of Idaho) to conduct fuels reduction treatments in the Myrtle Creek watershed.
- Recognition of the lengthy public collaboration efforts conducted by the Myrtle Creek Working Group over the course of approximately 18 months to discuss proposed treatments, and the compromises that the Joint Powers were willing to make during the collaboration in order to further implementation of this project in a timely manner. (See the Introduction and Section 5 – Public Collaboration for more information.)
- Historic information and environmental data collected in the area document the historic fire regime and fire behavior across the landscape of the Selkirk Mountains.
- Unwanted fires result in damages to the natural resources, which in turn have detrimental effects on water quality in Myrtle Creek.
- The Myrtle Creek Fire of 2003 increased the watershed's sensitivity to future unwanted disturbances.
- Responding to large wildfires in a municipal watershed can include expensive post-fire treatments to expedite recovery of the area and reduce the potential for significant negative impacts during future seasons of wet weather.
- Portions of the Snow Creek watershed also play a critical role in the goals for the Myrtle Creek watershed due to the documented fire behavior across this landscape.
- Recognition that this project is the first step in establishing and maintaining reduced levels of hazardous fuels in the Myrtle Creek and Snow Creek watersheds to reach the goal of reduced threats from unwanted fires in the municipal watershed.

[17] The Joint Powers Agreement signed by the Kootenai Tribe of Idaho, Boundary County Board of Commissioners, and City of Bonners Ferry, Idaho in 2001 formed the Kootenai Valley Resource Initiative (KVRI). KVRI is made up of the Joint Powers and an eleven-member Board that has authority to establish sub-committee "working groups" as needed to provide a public forum for public collaboration on resource issues important to KVRI and the community.

This discussion focuses on the issues I feel were key to the project or the most debated:

- Risk to the community in terms of their primary source of drinking water.
- Activities in inventoried roadless areas.
- Management of old growth forests, including:
  - Use of a burn-only treatment to reduce fuels.
- Activities within grizzly bear core habitat.

Risk to the Community

Myrtle Creek serves as the primary source of drinking water for the City of Bonners Ferry and Kootenai Tribe of Idaho. As I considered options for this project, I looked at:

- Future risks to the community's drinking water if the project was not implemented,
- Kinds and levels of risks associated with alternatives other than the proposed action, and
- Outcomes of going ahead with the preferred alternative.

In light of making my decision, I looked at two factors for risk: duration - the length of time there would be an exposure to risk, and manageability - the level of certainty or predictability of being able to complete measures that would reduce the risk. For example, when considering the risks of a burn-only treatment versus mechanical treatments followed with prescribed burning, I thought about the following. Using burn-only, the duration of the risk could be several years while we wait for the right "burn window" when the current and predicted weather, amounts and arrangement of fuels, moisture levels in the fuels, and air quality (smoke management) are all within the allowable ranges. Using mechanical treatments gives us much more assurance that the fuels we want removed will be removed and even though there will be some slash on the ground for a few months up to one year, the amount of fuels will be reduced and it should be easier to reach the burn window to clean up the slash by prescribed burning.

I believe my selection of fuels reduction treatments, road improvements, road maintenance and decommissioning will reduce the threats to the City's water and thus, the community, and meet the goals of this project.

Activities in Inventoried Roadless Areas

Roadless values are important to the American people. The State of Idaho alone includes an estimated 9.3 million acres in IRAs. The Myrtle Creek HFRA project area includes portions of two Inventoried Roadless Areas (IRAs) – the Selkirk and Kootenai Peak IRAs (see map in FEIS, page 3-81). My decision will conduct fuel reduction treatments in about 295 acres in the Kootenai Peak[18] IRA and approximately 125 acres in the Selkirk IRA, a very small fraction of the total IRA acreage in Idaho.

Activities in roadless areas were topics of discussion during Myrtle Creek Working Group meetings and field trips. Compromises were made regarding construction of new roads in IRAs and the potential delays that could have caused, as well as the potential effects of new roads in the locations where they would have been built. The group reached consensus that this project would not include construction of temporary roads in roadless areas.

During the Objection process, I also received formal objections to mechanical treatments in IRAs and I respect those opinions. I am aware that there are those who feel entry in IRAs would preclude future consideration of these areas as wilderness. However, none of the activities would do that. In addition, none of the proposed treatments intersect areas that would be considered potential wilderness in the Idaho Roadless Petition or revision of the IPNFs' Forest Plan. Both of those efforts have had

[18] Current size of the Kootenai Peak IRA is approximately 4,844 acres; Selkirk IRA is approximately 97,957 acres.

considerable public involvement, including the involvement of some of the groups who submitted objections to this project.

Furthermore, my decision meets the exceptions provided in the 2001 Roadless Rule for the types of mechanical treatments that will be used.

Roadless Rule of 2001: Two years prior to the passage of HFRA, the 2001 Roadless Rule recognized the importance of roadless areas[19] and the diverse values the American public places on them. The 2001 Rule also recognized: *"The effects of uncharacteristic wildfires often include unnatural increases in wildfire size, severity, and resistance to control and the associated impacts to people and property."*

The Rule did provide exceptions for the types of mechanical fuels treatments we are conducting in IRAs. It acknowledged there would be debate surrounding proposed activity in IRAs; but did not *prohibit* entry in IRAs and specifically provided the following exceptions: *"The final rule allows for timber harvesting of generally small diameter timber for limited purposes when it maintains or improves one or more roadless area characteristics and: (1) Improves threatened, endangered, proposed, and sensitive species habitat or (2) maintains or restores the characteristics of ecosystem composition and structure, such as to reduce the risks of uncharacteristic wildfire effects."*

One of the roadless area characteristics listed in the 2001 Rule is: *"…sources of public drinking water…"* Clearly, if the exceptions for timber harvest apply anywhere it is to the municipal watershed of Bonners Ferry. Proposed fuel reduction treatments are specifically designed to *maintain or restore the characteristics of ecosystem composition and structure such as to reduce the risk of uncharacteristic wildfire effects*. These *uncharacteristic effects* include the effects on people.

Effects on Roadless Area Characteristics

The analysis methodology for the roadless characteristics for the Myrtle HFRA project meets requirements of 36 C.F.R. §294.11 (Table 4.46 FEIS, p. 4-90). My selected alternative is consistent with the 2001 Roadless Rule and the 1987 Forest Plan and is in line with the Idaho Roadless Area Petition, and the revision of the Forest Plan.

Since there will be no construction of roads or other facilities in roadless areas, there will be no effects from such activities. The fuels reduction treatments will parallel the disturbance regimes found historically in the Myrtle and Snow Creek ecosystems. While the irregular shelterwood treatment (only in Unit G1) will be most changed from the way it looks now, this won't be a departure from their appearance at various times historically. Following fuels reduction treatments and reforesting where appropriate, the treatment areas will resemble historic burn patterns and blend with the natural patterns in the area. Snags left for wildlife use will add to the natural-looking appearance in the areas.

Activities will not interfere with normal recreational access to trailheads, nor will they change the character of recreational opportunities. The manageability and boundaries of the roadless areas will not be affected.

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[19] There are some who feel entry in IRAs would preclude future consideration of these areas as wilderness. Wilderness and Wilderness Study Area are both designations reserved to Congress. None of the actions in my decision will preclude future consideration of these areas as wilderness. None of the treatments intersect areas that would be considered potential wilderness in the development of Idaho Roadless Area Petition or revision of the IPNFs Forest Plan. These efforts have had considerable public involvement starting with discussions during preparation of the 1987 Forest Plan, and more recently including the involvement of some of the groups who submitted objections to this project. Information on the State of Idaho's Petition can be found at www.gov_idaho.gov/roadless_petition.html and at www.fs.fed.us/kipz/index.php for more concerning the IPNF Forest Plan Revision status.

Mechanical Treatments and Road Construction in IRAs

I respect the input provided by the groups who submitted objections to mechanical entry in IRAs, as well as the Working Group's recommendation that this project not construct roads in IRAs. Roadless values are important to the American people. The action developed through the community-based collaboration would treat a total of about 980 acres in IRAs. My decision includes treatments on about 420[20] acres; I am deferring treatment on about 560 acres in IRAs.

Other National Forests in Idaho have proposed mechanical treatments in IRAs and knowing that regional environmental groups were involved in collaborative efforts for those projects I sought more information. I found some strong similarities to agreements on mechanical treatments in IRAs made with other Forests in Idaho. In some areas there was agreement for removal of some medium and large trees, and in one instance agreement for diameter limits up to 18" dbh for Douglas-fir. I clearly saw consistent support of mechanical removal of generally smaller diameter trees in IRAs, with some flexibility included for removal of larger trees, and retention of larger fire-resistant species.

In some instances where there was no support for clear cuts or regeneration harvests, there was support for treatments with *crown* spacing of 15-20 feet. This equates to a spacing of about 30-40 feet between the *boles* of the residual trees, or essentially the spacing of a shelterwood cut, which is a regeneration harvest. While no clearcuts are proposed in Myrtle Creek HFRA EIS some irregular shelterwood cutting was proposed in IRAs that would leave similar stand densities. I find these efforts with other Idaho Forests encouraging and feel many of our proposed prescriptions actually have more, and not less, in common.

Small Diameter Tree Removal in IRAs

Proposed mechanical treatment prescriptions meet the 2001 Rule with respect to removal of *generally* small diameter trees. Indeed the 2001 Rule did not define *small diameter trees*: *"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"*

Some groups have asked for diameter limits on treatments. We looked at the science behind use of diameter limits and decided it would be less effective. Our review of studies by Reinhardt and Scott (2007) showed that arbitrary diameter limits were the least effective prescriptions in reducing fuels. Dr. Graham and Dr. Jain (2007), scientists at the Rocky Mountain Research Station in Moscow, Idaho, considered small diameter trees those that are less than 12" dbh. Trees less than 10" dbh were considered small by the USFS (Brohman and Bryant, 2005). For the Myrtle Creek project prescriptions were designed to remove small diameter fuels while leaving the larger diameter trees. Data from field exams conducted in proposed treatment units in IRAs show that the 87% of the trees proposed for removal would be less than 12" dbh and nearly 2/3 would be less than 10." Furthermore, 98% of the trees proposed for removal are less than 15" dbh.

In terms of the trees that will remain, the *average* diameter will typically be between 15" and 20" dbh. Only on very rare occasions will a tree larger than 20" dbh be removed. Examples of when this could happen would be trees that pose safety hazards, or species such as lodgepole pine and grand fir that are highly susceptible to insect and disease attacks when they reach this size. In fuels reduction areas that contain dry forest old growth, all of the old trees larger than 21" dbh will be retained. Additionally, the

[20] 295 acres in the Kootenai Peak IRA and 125 acres in the Selkirk IRA. Current size of the Kootenai Peak IRA is approximately 4,844 acres; Selkirk IRA is approximately 97,957 acres

marking guides in these treatment units specify that no trees larger than 17" dbh will be designated for cutting.

Use of Prescribed-Fire-Only in IRAs

Beyond the wildland urban interface (WUI) there has been support for use of only prescribed fire in the back country of other Idaho IRAs. The selection of this tool is based on several factors, one of which is the location, and consideration of the conditions of the fuels. The IPNF has used it, depending on the conditions of the particular timber stands. However, the entire Myrtle Creek watershed was identified as part of the WUI in Boundary County's Fire Mitigation Plan.

The use of *prescribed-fire-only* presents too high a risk in this watershed which is a primary source of municipal water. Even the most carefully planned and executed prescribed fire without the use of mechanical pre-treatment may constitute unacceptable risk. I am not willing to accept that risk, or subject the citizens of Bonners Ferry to that risk.

Defensible Space Structure Protection

Regional environmental groups state they support projects in IRAs that involve defensible space structure protection. Defensible space is not an issue in Myrtle Creek. Protection of the watershed from uncharacteristic wildfire is the issue, and ultimately clean drinking water for Bonners Ferry is the desired outcome. Defensible space prescriptions are normally not applied at a broad enough scale to address the magnitude of fuels issues in Myrtle Creek.

Types of Fuels Reduction Treatments

Given the concerns the environmental groups have expressed with respect to proposed irregular shelterwood cutting in the IRAs, I have decided to modify the prescriptions in treatments units within IRAs to incorporate *some* of the free selection concepts Dr. Graham discussed during our field trip on June 4, 2007. I feel I can make these prescription modifications in the IRAs and still meet the Purpose and Need of the project. I am not making any prescription modifications for treatments outside IRAs.

Activities in Old Growth

There are over 7640 acres of old growth in the Myrtle HFRA project assessment area.

My decision includes treatment of approximately 113 acres of dry site old growth, leaving the fuels in over 98% of the old growth stands in the assessment area untreated. I am deferring fuels reduction treatments in 129 acres of dry site old growth.

In making my decision, I was aware of the social and ecological values of old growth and that there are differing opinions regarding its management. The entire Working Group agreed that the hazardous fuels in the dry site old growth were a high priority to treat with this project; the disagreement or minority opinion was how the hazardous fuels (crown fire risk) should be ameliorated.

I weighed the desires of those who want old growth to remain untouched by mechanical treatments against the need to safely and effectively return the role of fire back into the ecosystem, particularly in ponderosa pine stands with old growth characteristics and to restore dry forest structure to open conditions featuring large diameter ponderosa pine, larch, and Douglas-fir.

During the Objections process, we took another look at old growth and went to the project area with representatives of those who filed objections to the project. We also invited research scientists who have first hand knowledge of these types of forests and treatments. Other trip participants included members of my staff with first hand knowledge of old growth and vegetation treatments in the area, and the fire behavior analyst who served on the Type I Incident Management Team during the 2003 Myrtle Creek Fire. (For additional information see the discussion of June 4, 2007 field trip.)

These stands are in need of fuels reduction treatments. Due to the risks associated with prescribed-fire-only treatments in these particular stands and locations I believe the best way to treat them is with mechanical treatments followed with prescribed fire. They are an important part of this project because they are located in areas that are strategic in protecting and maintaining the municipal water supply. We are not entering them simply because they are old growth. I believe we cannot be effective with the overall project without treating these locations.

Concerning old growth with this decision:

- There will be no entry into moist site (cedar-hemlock) or cool-moist (sub-alpine fir) old growth.

- The fuels treatments were designed to increase overall quality and integrity of dry site old growth stands, maintain scattered old growth Douglas-fir, improve and maintain development of larger diameter ponderosa pine and larch as future old growth, and restore old growth characteristics to the dry site stands. Ladder fuels will be removed from below and around the large old relic trees to lower the risk of future stand-replacing crown fires. Additionally, trees from smaller size classes will be retained to provide additional structural diversity and replacement old growth for the future. In order to maintain and improve the old growth attributes of the stands, they will be underburned following the fuels reduction treatments, and again every 10 to 25 years as appropriate.

- The risk of a stand-replacing fire in the treated dry site old growth stands will be reduced by approximately 62 percent and in all treated dry forest stands by an estimated 54%.
- In the long-term, the treated areas will trend toward long-lived seral species such as ponderosa pine and western larch which are fire-adapted and fire-resilient species. In the long term, the conditions will be more sustainable. Restoring these fire adapted stands is emphasized as a high priority in the 2001 Roadless Rule (Section 294.13(ii)) and is supported by science from the old growth study Effects of Restoration Thinning on Presettlement Pinus ponderosa in Northern Arizona (Stone, J.E., T. E. Kolb, W.W. Covington, In Restoration Ecology Vol. 7, No. 2, pp 172-182, June 1999).
- None of the treatments will result in a net loss of allocated old growth, consequently Forest Plan standards for old growth maintenance and distribution will continue to be met.

  The Myrtle Creek HFRA assessment area intersects old growth management units (OGMUs) 14, 16, and 18. Forest Plan direction is to maintain at least 10 percent of the forested portion of the IPNF as old growth. For distribution purposes at least 5% of each (OGMU) must be maintained as old growth. As part of the IPNF Forest Plan strategy, 10% of the total forested area on Bonners Ferry Ranger District (roughly 51,000 acres) was allocated for old growth management, as directed in a May 7, 1991 letter from the Forest Supervisor. Currently, we have 65,853 acres of the district (16.7%) allocated as old growth (2004 Forest Plan Monitoring Report).

After reviewing the old growth analysis and information in the FEIS and project file and discussing this issue with the research silviculturist, forest ecologist, fire behavior analyst, and others I believe my decision provides greater assurance that the dry site forest conditions in the project area will be more sustainable for old growth characteristics compared to not treating these areas. (Stone, et.al. 1999)

The best science available tells us that at some point fire is missing from parts of our ecosystem; but it has to be reintroduced cautiously until our forests are restored to a more natural condition. We may need treatments other than fire alone, to reduce risks brought on by the density and the fuel loadings in these forest stands.

Use of Burn-Only Methods to Reduce Fuels

In reaching my decision I also weighed the risks of using only prescribed fire to reduce fuels against the likelihood such treatment would be effective. As explained in Alternative 4 in the FEIS, in order to reduce the surface and ladder fuels (small trees), the prescribed fire would likely be so hot that there would be a risk of heat girdling and killing the old trees we are trying to save, and the *risk of escaped fire would be high.*

Not only did the Working Group spend a considerable amount of time discussing use of a burn-only option for all treatment units, questions about reintroducing fire into the Myrtle Creek watershed came up during the Myrtle Creek Fire in 2003. With his first-hand knowledge of this watershed and the fire behavior he witnessed during that fire, Type I Incident Commander Steve Frye said that before fire could be reintroduced (by use of prescribed fire), some small trees (ladder fuels) needed to be removed.

For reasons discussed in detail earlier in this document, I believe my decision to not use a burn-only option will provide reasonable and effective fuels reduction treatments under a more controlled environment when compared to the risks incurred with the burn – only option. In a municipal watershed, I find these risks unacceptable.

Grizzly Bear Core Habitat

Grizzly bear habitat was discussed during Working Group meetings. For the Final EIS, I asked the IDT to develop and analyze an alternative that would not include treatments in grizzly bear core habitat areas (Alternative 5 in the FEIS).

I am deferring Units B1, B3, B6, and B9 in order to have further discussions with U.S. Fish and Wildlife Service (USFWS concurred with a finding of *may affect, not likely to adversely affect* grizzly bear in their concurrence letter dated August 6, 2007).

Section 4. My Decision

I believe the collaborative process built into HFRA provides the proper forum for community-based groups, such as the Myrtle Creek Working Group, to discuss where hazardous fuels treatments may be appropriate. The 2001 Roadless Rule provides direction for treatments in IRAs. In this case, the desires of the citizens of Bonners Ferry to drink clean water and the rights of the Kootenai Tribe of Idaho are my primary consideration. I feel my decision respects and honors the integrity of the community-based group that worked so hard to develop the proposal, but most importantly will reduce the risk of uncharacteristic[21] fire and its potential effects in the municipal watershed of Bonners Ferry. Ultimately this project is about protecting and maintaining the drinking water supplied by Myrtle Creek.

Description of Activities

My decision defers Units B1, B3, B6, and G9. My hope is that deferring a decision on portions of the proposal in IRAs will provide a good faith opportunity to further explore the common ground I feel we have established with the groups who submitted objections. Meanwhile, as I consider the interest of the Joint Powers and the majority of the community-based collaborative Working Group, I feel it is critical to move ahead with a decision to implement the remainder of the project.

[21] *Uncharacteristic* as defined by the 2001 Roadless Rule.

I have selected Alternative 2, as described in this ROD, to achieve the goals for this project. Units B1, B3, B6 and G9 are being deferred at this time in order to have further discussion with U.S. Fish and Wildlife Service. I am authorizing certain improvements and maintenance of the portions of the road system that will be used as haul routes during the fuels reduction activities (approximately 25 miles), temporarily re-opening about ½ mile of Road 402-C which will be decommissioned following use, and decommissioning approximately one mile of Road 1309-UA

I am incorporating into my decision the following items outlined in the FEIS:

- Common Features and Required Design Criteria (FEIS, section 2.9)
- Monitoring Items (FEIS, section 2.10)
- Best Management Practices (FEIS, Appendix C)
- Conservation Measures (Wildlife and Fisheries Biological Assessments and Evaluations)

As explained in the description of Suggested Prescription Adjustments, I did choose to include some silvicultural prescription modifications based on the most recent field trip to the project area (June 4, 2007). The following table shows the fuels reduction treatments that will be used and the follow-up prescribed fire treatments that will take care of the fuels created during the vegetation management and help fulfill the goal of reintroducing fire and trending toward a more natural fire condition class/regime.

Table 1. Summary of Fuels Reduction Treatments

Management Activity	Acres
Variable Density Mosaic **Dry Site Restoration**	*322* *778*
Thinning	*140*
Irregular Shelterwood	*113*
Total Acres	***1353***
Follow-up Fuels Reduction Treatments Grapple Pile Underburn	*(acres)* *623* *730*
Total Acres	***1353***

Acreages are estimates based on field visits, aerial photo interpretation, TSMRS database information, and GIS/GPS data.

Treatments will utilize a variety of operation systems selected and designed for each treatment unit based on topography of the unit, conditions of the soils, and accessibility from the transportation system and other factors. Table 2 displays the systems and total number of acres utilizing each system.

Table 2. Operational Systems

Operational Systems	Acres
Ground based	411
Skyline	380
Helicopter	562

Acreages are estimates based on field visits, aerial photo interpretation, TSMRS database information, and GIS/GPS data.

The following table displays the actions that will be taken in management of the transportation system (roads) within the project area.

Table 3. Transportation System Management

	(miles)
Transportation System Management Temporary Road Reconstruction / Decommission following use. Approximately 0.5 mile of Road 402-C will be reconstructed. Following post-treatment activities, this road segment plus an additional 0.4 mile to the junction with main Road 402 will be decommissioned.	0.5 temp rd construction 0.4 additional decommissioned
Other Road Decommissioning – Road 1309-UA will be decommissioned.	1
Total Road Decommissioning	**2**
Road Improvements – improvements* will be made on roads used as haul routes during the silvicultural/fuels reduction treatments.	25

*Improvements include roadside and surface maintenance, etc.

Acreages and lengths of road segments are estimates based on field visits, aerial photo interpretation, TSMRS database information, and GIS/GPS data.

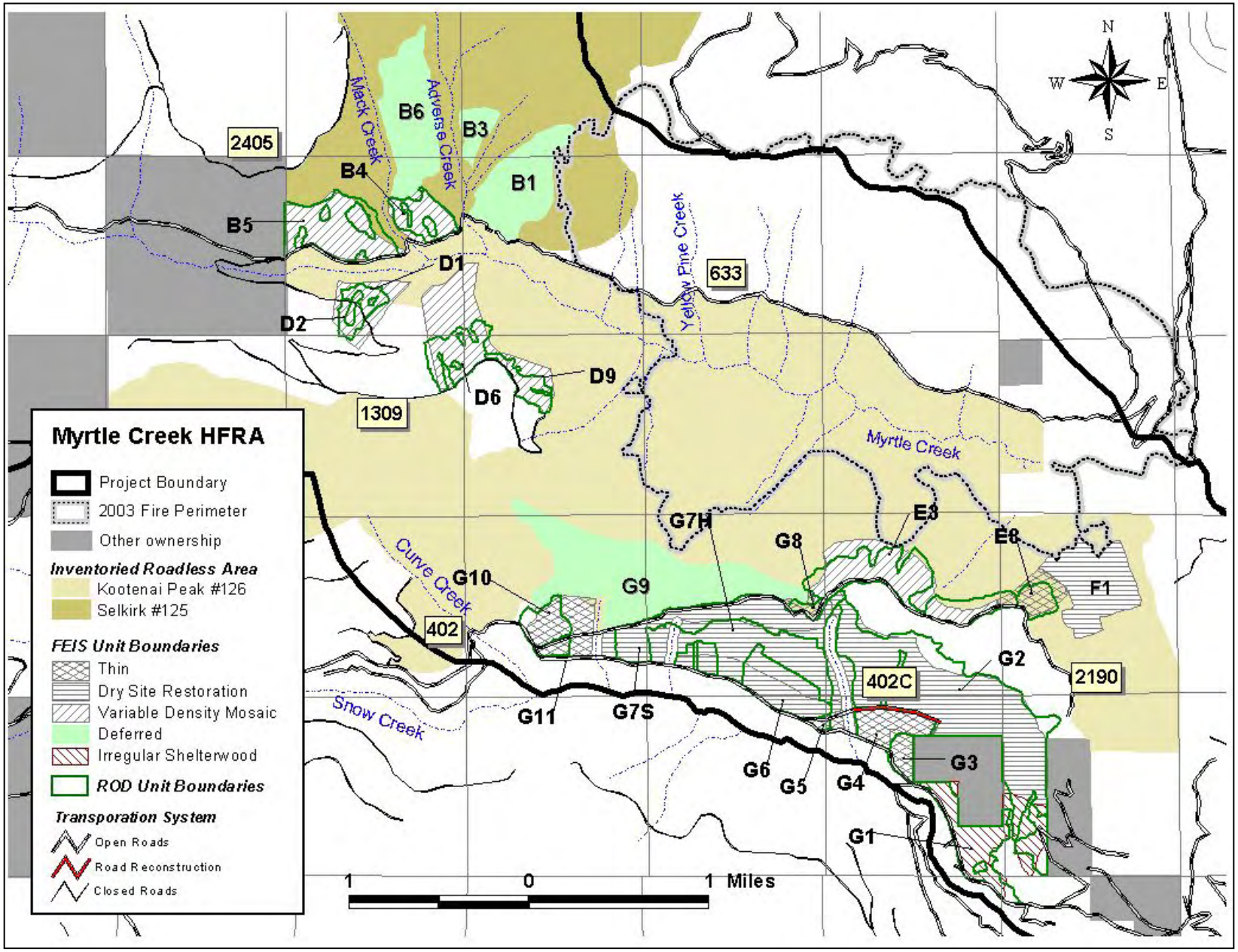

Figure 16. The Selected Alternative

This project provides an opportunity to use Stewardship contracting authority which would allow us to trade goods for services to accomplish the work on the ground to meet the community's objectives for the watershed. Stewardship gives us another tool in managing identified risks to lessen their duration.

Monitoring Activities

My decision includes the following specific monitoring items:

Dry Forest Old Growth: Multi-party monitoring of activities in the dry forest old growth treatment areas. During the collaborative discussions concerning treatments in the dry forest old growth areas, it was agreed that photo points would be established and photos taken by a local member of the Working Group (professional photographer) before and after treatments to document the effects of the fuels reduction treatments and the restoration of the dry forest old growth composition and structure. Photo points have been identified and initial photos taken to document the "before" conditions.

Water Quality: The City of Bonners Ferry has monitored water quality for decades as part of their role in providing municipal water. The Forest Service outline for water quality monitoring will be followed in addition to that done by the City – with a bottom line of reviewing culverts and road erosion at a minimum of every two years for a six year period. Culvert and road conditions will be monitored through ongoing routine aspects of other Forest Service management activities.

Wildlife: Monitoring will be accomplished through methods already in use by the Forest Service.

Section 5. Rationale for My Decision

The Joint Powers asked the Forest Service for a project that will reduce fire-related hazards and risks to the municipal watershed so they can continue to rely on Myrtle Creek as their primary source of drinking water. They felt the Healthy Forests Restoration Act provided the reasonable and logical means of bringing diverse interests together to work collaboratively on a focused proposal. Given the fire history and potential in the watershed, the background of the issues, and the diversity of the collaborative group, it was clear to me that reaching consensus on a proposal would take some work. This decision is the culmination of more than 18 months of meetings and field trips with the Working Group and an additional three months working with those who objected to certain aspects of the project.

Myrtle Creek Working Group Goals:

Maintain a continuous supply of water from Myrtle Creek for the City of Bonners Ferry and the Kootenai Tribe of Idaho.

Reduce the risk of uncharacteristic, unwanted fire in the Myrtle Creek watershed while maintaining and restoring habitat for fish and wildlife.

The project has been designed to address fuels reduction and water quality concerns, including a primary need to place strategic fuels reduction treatments where we will be able to fight future wildfires on favorable terms. That is, to be able to fight fire aggressively, but provide for safety first.

I have made this decision based on several criteria:

- How well the selected alternative meets the purpose and need for action, including:
  - The activities/effects of the selected alternative and the other alternatives.
    (The short- and long-term effects of implementing an action alternative compared to the short- and long-term impacts of taking no action.)

  - How well the alternative responds to environmental and social issues and concerns identified by the Myrtle Creek Working Group and other members of the public.
- Consistency with the Land and Resource Management Plan for the IPNF (Forest Plan).
- Consistency with Forest Service Policy.
- Consistency with the Healthy Forests Restoration Act.
- Consistency with the 2001 Roadless Rule.
- Consistency with other applicable laws.

Best Available Science

My decision is also based on the consideration of "best available science." The need to employ the best science is not new, as agency decisions have always required a sound technical basis. My conclusions are based on the record which shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and where needed, the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. Where appropriate, our responses to the substantive objections (Appendix A) also describe the consideration of science suggested by the objector(s) and discuss the applicability and use of various available sciences for the design and analysis of this project.

In consideration of responsible opposing views, I asked my staff to contact several scientists and authors of various publications. For example, these contacts included:

- Discussions with Dr. Russ Graham: Dr. Graham participated in the June 4, 2007 field trip with the objectors and was available to answer questions and clarify his research relative to the landscapes in the Selkirk Mountains and specifically within the project area.

  The objections received from The Lands Council, et.al, included a statement from Peter Morrison in which he referenced Dr. Graham's Hayman Fire Case Study[22]. In his statement, Morrison referred to all forms of the studied treatments as fuels treatments, but *that is not the case*. 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, p. 98).

  In the graphs that Morrison provided, none of his examples of treatments that illustrate burn severity are the same treatments as what will be used in the Myrtle Creek HFRA project area. Most either only address the canopy fuels with no concern over the surface fuels, or ladder fuels (canopy base height); or they address the surface fuels but not the ladder, or canopy fuels (canopy bulk densities). The fuels reduction treatments in this project will space the tree canopies, thus reducing canopy bulk densities; remove ladder fuels, thus addressing canopy base heights; and reduce surface fuels.

  The Hayman Fire study also states, "… 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." Ignitions and fires will still be expected in the project area, however in the treated areas because the fuels will be reduced, there will also be reduced fire behavior (crown fire versus surface fire) and a lessening of fire intensity and severity. Suppression efforts will be more successful with less concern for firefighter and public safety.

[22] Dr. Graham was the Case Study Leader and Technical Editor of the *Hayman Fire Case Study*, General Technical Report RMRS-GTR-114, Sept. 2003, Rocky Mtn Research Station, USDA Forest Service.

Because severity will be lower, there will be reduced effects on soils and tree mortality. Also, in the case of Myrtle Creek, a lower risk to the quality of the drinking water.

- Information Provided by Dr. Ron Wakimoto: In his statement included as part of the objection received from The Lands Council et.al, Dr. Wakimoto had specific concerns that the fire risk and hazard were inaccurately depicted in the Final EIS. He suggested pre-positioning personnel and equipment during storms in specific areas; and regulating [public] access. He felt that the analysis should have included consideration of the timing of lightning ignitions vs. person-caused ignitions relative to actual fuel moistures, and that the analysis should match project objectives and values at risk.

  The Bonners Ferry Ranger District is responsible for fire suppression on approximately 426,000 acres and simply does not have enough resources to pre-position them during lightning storms, which tend to be widespread and cause multiple ignitions during a single storm.

  The analysis for this project did include review of the data on cause and timing of fire starts within the project area: 94% lightning caused, 6% person-caused, occurring from June through October with more than 85% of all fires occurring July through September.

  The design and analysis of this project focused on the request the from the Joint Powers (to take active steps to reduce fire-related risks and hazards and related effects of future wildfires in the municipal watershed and to maintain Myrtle Creek as their source of drinking water) and the goals identified by the Myrtle Creek Working Group (maintain Myrtle Creek as the source of water and reduce the risk of unwanted fire in the watershed).

  The values at risk in the project area are the source and infrastructure for the municipal water supply, old growth, soil productivity, wildlife and fisheries habitat, recreation, and the safety of the public and firefighters in the event of a wildfire – all items that were analyzed and considered in the FEIS.

  Meeting with Dr. Wakimoto:

  The Bonners Ferry District Ranger and the Myrtle Creek IDT member who conducted the fire and fuels analysis for this project met with Dr. Wakimoto in Missoula, Montana on June 25th 2007. They discussed the statement he provided for The Lands Council's objections and explained the methods and factors used in the analysis as well as the goals of the project and the values at risk.

  Appendix A contains additional information regarding Dr. Wakimoto's statement and our response to the substantive objections.

Other Alternatives Considered

The Final EIS describes other alternatives that were considered for this project (FEIS, pg. 2-9 through 2-11).

Alternative 3: approximately 2800 acres of fuels reduction treatments. The Working Group recommended this alternative not be considered further (see discussion of March 30, 2005 meeting).

Alternative 4: request from the Working Group that we look at an alternative that would evaluate potential fuels reduction methods, other than using timber harvest equipment that could meet the old growth stand attributes and the hazardous fuels reduction objectives. Alternative 4 included two methods the collaboration group considered to accomplish these objectives; both of which would reintroduce fire back into these fire dependent stands:

- The first method would involve prescribed burning the stands without any site preparation at temperatures hot enough to kill the majority of the seedling and sapling sized trees (ladder fuels) and about one-fourth of the pole and medium sized trees. For a burn like this to be effective, the weather and fuel conditions would have to be very dry. Consequently, the risk of an escaped fire would be high.
- The second method would include some felling of the unwanted trees, followed up with prescribed burning. This could be done under more moist conditions than the first method; however, with the acres involved and the proximity to private lands, this would still be very risky.

Both of these methods, regardless of success rates would have the following risks and consequences:

- The volume of smoke and particulates that would violate air quality standards. The prescribed fire would burn greater amounts of biomass, and burn at temperatures hot enough to kill most of the ladder fuels. There would be a risk of losing the entire organic (duff) layer and stored nutrients, which would be a violation of Region 1 soil quality guidelines.
- Through heat girdling, this would risk killing the very same old trees that we are trying to save.
- Would forego the opportunity to utilize wood fiber as commercial products and to generate funds for watershed improvement projects.
- Post-treatment – Alternative 4 might not meet old growth status after the fuels reduction treatments.

At the conclusion 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) that uses commercial logging followed with underburning to reduce fuels in the two old growth stands described above (June 30, 2005 meeting notes in the project file). Alternative 2 was subsequently adopted by consensus by the KVRI Board.

For the reasons explained above, Alternative 4 was dropped from further consideration and study.

Alternative 5: This alternative was developed through consideration of public comments received on the Draft EIS and during discussions with the collaboration group. The design for this alternative did <u>not</u> treat the following areas:

Inventoried Roadless Areas
Dry forest old growth stands
Grizzly bear core habitat

Alternative 5 included fuels reduction treatments on approximately 865 acres, road improvements on approximately 22 miles of haul routes. The same as my Selected Alternative, it would have temporarily re-opened and then following use decommissioned Road 402-C and decommissioned Road 1309-UA.

I did not select Alternative 5 because it did not meet the purpose and need and my selection criteria to the extent that Alternative 2 as described in this Record does. More specifically I was concerned that Alternative 5:

- Would not provide a fuels buffer for the Mack Creek and Adverse tributaries to Myrtle Creek.
- Provided fuels reduction treatments on only approximately 100 acres in the Myrtle Creek watershed. (FEIS, pg. 2-18)

- Trended zero acres toward restoration of long-lived seral species such as ponderosa pine and western larch – a primary concern for their short- and long-term resilience to drought, insects and diseases. (FEIS, pg. 2-39)
- Provided less reduction of risk of stand-replacement fire in old growth stands (55% compared to 62% under my decision). Alternative 5 would not have conducted fuels reduction treatments in old growth stands. Even in the absence of stand-replacing fire these dry forest old growth forests would continue to decline in health over time. The indirect and cumulative effects would be an increase long-term risk of losing valuable components to insects, disease, stress and ultimately severe fire, which would not only kill smaller diameter Douglas-fir, but would likely kill the old growth ponderosa pine, western larch, and Douglas-fire trees as well. (FEIS, pg. 2-18, 4-72, 4-73)

Fuels Reduction Treatments

I have determined after review of the information in the Final EIS and the record that the community's goals for this municipal watershed and adjacent forests can be reached in part by managing the amount of fuels, tree density and species composition. This will be done by implementing well-designed fuel reduction treatments that include a mix of fuel treatments, and prescribed fire. I am selecting specific treatment modifications based on the best available science and in consideration that they maintain the integrity of the collaborative proposal. Most importantly, like the original prescriptions, they meet the purpose and need of this HFRA project.

The fuels reduction treatments were developed specifically for each treatment area. Selection criteria included the existing and desired future conditions in the municipal watershed and adjacent forests. Treatment locations are strategically placed across the landscape to provide effective reduction in the potential for crown fire and its associated hazards and effects on the watershed. Within the treated areas, the fire regime condition class will be improved. In the event of a fire in these areas, suppression capabilities will allow more effective direct attack tactics. Risk to life and resources, and fire severity will be reduced. (FEIS, pg. 2-39, Table 2.13)

Transportation System

My decision also includes management of certain portions of the roads in the project area. The selection of these activities is based on water quality/hydrology concerns, access for fuels reduction treatments and fire suppression, and wildlife habitat needs. A thorough Roads Analysis (RAPS) was completed for this project and provided information I considered in my decision.

Benefits to the Municipal Watershed

Implementation of Alternative 2 will help to maintain and in the long-term result in a net benefit to the quality of the municipal water in several ways.

- There will be an overall reduction in sediment risk and a net decrease in sediment yield and risk of sediment delivery in the long-term.
- Improved road conditions will reduce the potential for failures at stream crossings and lower the risk of sediment production and delivery in the case of future wildfires.
- Should wildfires occur, beneficial uses will be impacted to a lesser extent and will recover more quickly than would be the case if the selected alternative is not implemented.

A Balanced Decision

During the decision process, I realized that I would not be able to fully satisfy all public concerns as some of them are mutually exclusive. However, I believe that I have made a decision that does the best to balance competing interests and considers both short- and long-term effects while meeting the purpose and need for the project. I believe Alternative 2, as described in this Record of Decision, will environmentally provide for the best long-term outcomes weighed against the short-term effects, and at this time do the most to meet the community goals for the Myrtle Creek watershed while recognizing the ecological, social, cultural, and economic concerns.

I have determined through review of the Final EIS and supporting documentation, that my decision is consistent with the applicable laws, regulations, and agency policies. I have considered the potential cumulative effects and the reasonably foreseeable activities.

The 2001 Roadless Rule states that, "*The effects of uncharacteristic wildfires often include unnatural increases in wildfire size, severity, and resistance to control and the associated impacts to people and property*." [emphasis added] The Rule goes on, "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." (Federal Register, Vol. 66, No. 9, page 3258)

Meeting the Purpose and Need

The purpose and need for action and desired future conditions for the Myrtle HFRA project area are based on Forest Plan goals, objectives, and standards. With the exception of Alternative 1 (No Action), all alternatives result in "movement" toward desired conditions. All action alternatives (Alternatives 2, and 5) respond in various ways to the purpose and need, but I believe Alternative 2 best achieves the purpose and need while responding to several issues better than Alternative 5.

In the Introduction and in "Reaching My Decision" I discuss how key issues influenced my decision. I did not select Alternative 1 (No Action) because it would not have taken any management action at this time toward meeting the purpose and need for this project. Alternative 2 provides an integrated multi-disciplinary approach to management of the project area and fully meets my goals and objectives. It does more to meet the fuels reduction needs than the other alternatives by treating approximately 1353 acres. The water quality and hydrology needs are met by reducing impacts of about 25 miles of existing roads by improving drainage structures and road surfaces, and decommissioning about two miles of existing roads. The selected alternative will also promote long-term persistence and stability of wildlife and fisheries habitat.

Purpose and Need - 1

My consideration includes both the goals (purpose and need) of this project and the requirements for projects authorized under the Healthy Forests Restoration Act.

The first stated project goal is:

> *Maintaining Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry and the Kootenai Tribe of Idaho.*

Documentation for HFRA projects includes:

1. Analysis of the hydrologic effects of the worst-case fire scenario.
2. Analysis of the worst-case road use scenario.

3. A description of the effects of not implementing the project.
4. Evaluation of the short- and long-term consequences of taking no action and of implementing the fuel reduction project
5. Information about the municipal watershed and community water supply.

Meeting this portion of the Purpose and Need

In reaching my decision, I looked at the risks to the community:

- Future risks to the community's drinking water, if the project was not implemented.
- The kinds and levels of risks associated with treatments other than the proposed action.
- The change in risks as a result of my selection of treatments.

I weighed the need to reduce threats to the municipal watershed against the potential environmental impacts of the actions that would be taken to begin the trend toward the desired future conditions. As I explained in the Introduction, the Working Group developed a set of objectives with one central theme - *clean drinking water* for the City of Bonners Ferry. As a participant in the process, the U.S. Forest Service, Bonners Ferry Ranger District (BFRD), was asked to look at fuels reduction work that could be done in and around the watershed to meet these objectives. I believe the Healthy Forests Restoration Act provides the cornerstone in responding to the very type of situation this community is facing in its municipal watershed.

After reviewing the FEIS and project record, and considering the work of the collaborative group, the objections and the follow-up discussions and field trip, I believe that Alternative 2 responds to this issue to a higher degree than either Alternative 5 or the No Action Alternative (Alternative 1).

1. Hydrologic Effects of Worst-Case Fire Scenario

Three scenarios are reasonably foreseeable in the project area – rain-on-snow events, above average snowmelt conditions, and large stand-replacing fire(s) which may or may not be followed by a high intensity rain storm or a rain-on-snow event. Any of these events would lead to an additional sediment pulses that could result in adverse effects to the channels, depending on the amount and duration of sediment that was generated.

Of these possibilities, without fuels reduction treatments *the worst-case would be a large stand-replacing fire followed by high intensity rain or a rain-on-snow event*. Such an incident can add large amounts of sediment to downstream lower gradient reaches of a stream. In the event of another fire, the additive impacts will be greater than would have occurred if the area had not been burned by a large fire in 2003. Conditions created by wildfires which are then followed by wet weather (over one season, one year or a period of years) can trigger landslides or surface erosion. After the 1926 fire, the most common problems occurred along steep stream break lands and included debris avalanches, slides, and debris torrents. The 2003 fire caused a high degree of soil burn severity[23] on approximately 31 percent of the burned area and a moderate degree of severity on another 34 percent.

In the event of a stand-replacing wildfire in the future, FuME models[24] predict that sediment erosion could be as high as 100 times greater in magnitude than that produced by mechanical fuel reduction treatments

[23] Soil Burn Severity – High Severity fires can cause hydrophobic soils, soil erosion and mass movement, and reduced soil productivity through loss of organic matter, nutrients, microbial populations and increases in noxious weeds.

[24] WEPP FuME model – a physically based soil erosion model that describes the processes that cause erosion. WEPP FuME is a total culmination of the predictions for hillslope erosion, road erosion, and hillslope erosions and cumulative effects related to fire. FEIS page 3-8 provides more information; further discussions are in Appendix D.3 of the FEIS.

2. Hydrologic Worst Case Road Use Scenario

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 in sediment contributing portions of all haul routes. This was done only to estimate the worst-case scenario; it is by no means a reflection of actual sale 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 practically every day by Sale Administrators, also by other specialists, and would identify poor conditions and shut down hauling as appropriate. In addition specific BMPs and mitigation measures will be adhered to in order to help further reduce the potential for effects from these activities (FEIS Appendix C: pgs. C-1 to C-12).

3. The Effects of Not Implementing This Project

Effects to the hydrology in the municipal watershed can be categorized as:

- Wildfire related effects, such as loss of vegetation and soil burn severity; and
- Road related effects, such as risks from aging culverts that could fail and release sediment into the stream.

The discussion of long-term effects describes wildfire risks/effects first, followed by the road-related risks/effects.

Wildfire Related Effects of No Action*:* The wildfire risk (likelihood of an ignition) in the project area will not change. Risk of stream crossing failure, sediment production and delivery would remain at existing levels until they were affected by a future wildfire. Generally, sediment yield[25] associated with fire recovers relatively quickly if the burned area is not steep or the soils damaged; however as we have seen in the aftermath of the 2003 Myrtle Creek Fire the effects of severe wildfire can have site-specific after effects that are still significant years later. In the absence of a stand-replacing wildfire(s), the watersheds would continue to support current sediment yields.

No Action results in the greatest risk of long-term effects to the values-at-risk for several reasons, including the fact that untreated stands would continue toward conditions that favor severe stand-replacing fires, and would have negative effects on the watersheds. In the event of a wildfire, there would be increases in water temperature, sediment and peak flows, thus negatively affecting water quality. Effects to sediment erosion from wildfires are highly variable depending on timing, location, size, weather, and suppression activities. Runoff timing and quantity would reflect the magnitude of the disturbances and the severity of the fire(s).

The risk of sediment erosion would depend on the extent of the vegetation change, conditions of the soil, floodplain and channel conditions, and weather following the fire. If a stand-replacing fire were to occur, the amount of burned area void of vegetation would increase, which would in turn, increase peak flows and negatively effect sediment yield. *FuME models predict that sediment erosion could be as high as 100 times greater in magnitude than that produced by fuels reduction treatments, if a stand-replacing wildfire were to occur.*

[25] Sediment yield is a function of erosion; the volume and duration of sediment would depend on the magnitude of the wildfires (or other sediment producing disturbance) and the location of the fire(s) or other disturbance in relation to sediment routing and delivery sources in the watershed.

Road Related Effects of No Action: Sediment yield is a function of erosion; as explained above, the volume and duration of sediment would depend on the magnitude of the wildfires and the location of the fire(s) in relation to sediment sources in the watershed. In general, roads that are not maintained tend to produce a level of long term, chronic sediment yield. Many of the road structures, such as culverts, are currently at or near the end of their expected design life. Over time, the risk of structural or functional failure at stream crossings would increase as culverts age beyond their normally expected design life. As long as there are no more wildfires, the amount of sediment would remain the same as existing conditions, but the *probability* of sediment delivery associated with the road structures would *increase* in the long term.

4. Short- and long-term consequences of taking no action and of implementing the project:

Implementation of this project will have some negative effects (i.e. sediment produced during road decommissioning) in the short term, but in the long run will result in positive changes in the hydrology in the project area. Not implementing the project will eliminate the few short-term negative effects, but *in the long-term the current risks would not be reduced.*

Water Quality – Implementation of the road decommissioning and associated soil restoration in the Myrtle Creek drainage will contribute to:

- Reduced soil compaction,
- Improved water infiltration, and
- Reduced surface runoff.

While culvert work and road decommissioning will have short-term negative impacts, in the long-term there will be positive effects through reduced sediment yield.

If this project is not implemented, no culvert work, road decommissioning and soil restoration will be done and *in the long-term, risks associated with compacted soils, aging culverts and current road conditions will continue*.

Watershed Condition – Approximately 25 miles of road conditions will be improved, resulting in:

- Reduced potential for stream crossing failure and road related sediment production and delivery, including in the aftermath of a severe wildfire (stand-replacing fire).
- Increased resilience of beneficial uses if a stand-replacing fire occurs, resulting in less impact to beneficial uses and quicker recovery.

If this project is not implemented, no culvert work, road decommissioning and soil restoration will be done and in the long-term, *risks associated with compacted soils, aging culverts and current road conditions will continue*.

Water Yield – Culvert work would:

- Reduce the risk of road failure, and
- Reduce the associated risk of sediment delivery.
- Proposed activities are expected to result in immediate short-term increases in peak flows (lasting only a matter of hours or days) that would be within the capabilities of Myrtle Creek and Snow Creek watersheds to absorb.

If this project is not implemented, no culvert work will be done and there would be no short-term increase in peak flows; however, *in the long-term, the current level of risks of road failure and the associated risks of sediment delivery will continue*.

Sediment Yield – With implementation of this project there will be:

- An immediate short-term (lasting a matter of hours or days) increase in sediment,
- An overall long-term reduction in sediment risk, and
- A long-term net decrease in sediment yield in the long-term.
- Beneficial uses would not be impaired.

The short-term increase is small compared to the long-term reduction in sediment yield and risk of sediment delivery.

If this project is not implemented, the immediate short-term increase in sediment would not occur; however, *in the long-term there would be no reduction in sediment risk and sediment yield. Current risks to beneficial uses would continue*.

Channel Morphology – With implementation of this project there will be short-term changes to channel morphology; however, overall morphology will be maintained and somewhat improved since many of the known sediment delivery sources would be rehabilitated.

If the project is not implemented, many of the sediment delivery sources will not be rehabilitated, thus *there would be none of the improvements that would be seen following implementation*.

Water Quality – In both Myrtle Creek and Snow Creek watersheds,

- Risks to beneficial uses would be reduced.
- Water quality issues associated with Total Maximum Daily Loads (TMDLs) would be addressed with improvements striving to benefit the TMDL process and reduce pollutants of concern.
- The proposed road improvements and decommissioning would have a net beneficial effect and work toward the TMDL Desired Future Condition.

In Deep Creek, the activities would have a low risk of delivery of sediment off the immediate site and would not contribute to the factors listed for Deep Creek in the 2002 TMDL Integrated Report..

If the project is not implemented, *risks to beneficial uses will not be reduced, and water quality issues associated with TMDLs would not be addressed through improvements*.

5. The municipal watershed and the community water supply system.

Myrtle Creek has been the primary source of high quality drinking water for the community of Bonners Ferry since 1928 and has provided water for members of the Kootenai Tribe for much, much longer. The municipal watershed produces high quality drinking water that requires minimal treatment – it tastes good, naturally. The intake facility and delivery system are gravity fed, allowing the City to provide water very cost-effectively. The Myrtle Creek system is more than adequate to meet even the peak demands of the more than 4000 people who rely on it – current capability of the source is 2.4 million gallons per day compared to a historic peak usage of 2.2 million gallons per day.

To be able to provide essentially uninterrupted supplies of drinking water, the City has developed two emergency backup sources and delivery systems. The first source is the Kootenai River. Although this is a large river, the system that pumps and filters water from the Kootenai River is capable of approximately 1.4 million gallons per day – 800,000 gallons short of the historic high need. Water from

the Kootenai River must be pumped from the river up to the City's water plant, where it must undergo greater and more costly treatment than water from Myrtle Creek. The need to pump the water to the facility also adds to the cost of the water. A second source, contingent upon the availability of excess water, is a tie-in with the Cabinet Mtn Water District, which could provide approximately 350,000 gallons per day, far short of the historic peak usage.

The geology of Boundary County is such that there is *relatively limited groundwater and no large aquifer* that the municipal water system can rely upon. Wells would not be a feasible source for the City of Bonners Ferry, in part because the characteristics of the soils are such that siltation reduces the long-term capacity of a well system and would result in costly maintenance needs.

Purpose and Need - 2

My consideration includes both the goals (purpose and need) of this project and the requirements for projects authorized under the Healthy Forests Restoration Act.

The second stated project goal is:

> *Reducing hazardous fuels in the Myrtle Creek watershed and adjacent forests; and*
>
> *Trending vegetation in Myrtle Creek watershed and adjacent forests in Snow Creek toward conditions that will be less susceptible to catastrophic (unwanted and uncharacteristic) fire.*

Associated documentation for HFRA projects includes:

- A description of the area based on the type of fire and fire behavior expected in foreseeable fire scenarios.
- The short- and long-term effects of selected treatments and of taking no action.
- A description of desired future conditions from a fire behavior perspective.
- Maps of recent fires and photos of present conditions and a description of what the area will look like with and without treatment (computer simulations, photos, or a combination).

Meeting this portion of the Purpose and Need

The question for this project was, "*Where do we need to place fuels reduction treatments to take care of the water?*" This is a high risk area because we know we will have fire here. Historically we have had fire here and it is important to have fire here – under our terms. But, it is also a municipal watershed and provides high quality municipal water to the Kootenai Tribe of Idaho and the Bonners Ferry community. Fires are costly in terms of financial costs the taxpayers must bear, but also in the potential effects to a municipal watershed. Fires that may be acceptable in other locations would not necessarily be acceptable in this municipal watershed. Given these conditions, where do we strategically place treatments that will allow fire fighters to safely and effectively respond to fire in the watershed?

In reaching my decision I weighed the need to reduce hazardous fuels in the project area against the potential environmental impacts of the actions that would be taken to begin the trend toward the desired future conditions.

Alternative 2 responds to this project goal to a higher degree than either Alternative 5 or the No Action Alternative (Alternative 1).

I considered the following characteristics of the fuels in the project area and the types of fire behavior that would reasonably be expected when these fuels burn. I believe my decision will implement

effective fuel reduction treatments that will meet the community's goals and the purpose and need for this project.

1. Describe the area based on the type of fire and fire behavior expected in foreseeable fire scenarios

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 – 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 fire history in the Selkirk Mountains provides valuable insights. The 1926 fire started more than seven miles south of the project area, burning down drainages and northward across ridges (as did the 2003 fire), and eventually came over the Snow Creek ridge and burned into Myrtle Creek. The Sundance Fire in 1967 had a similar pattern of moving to the northwest and crossing in/out of numerous drainages.

We can look to the recent past to see what would be expected in a foreseeable scenario without implementation of this project. The Myrtle Creek Fire in 2003 burned a total of 3600 acres (including approximately 1,300 acres in roadless areas) 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 re-burn where high intensities and severities could once again be realized. Fuels reduction units (such as B4, B5, D1, D2, D6, and D9) will act as a buffer for fire moving down the drainage into the burn area, since local winds funnel down drainage and move fires in that general direction as well as to the north.

The fire behavior witnessed during the 2003 fire 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. Some residents were asked to evacuate because of the potential threat to their homes and others were concerned that if the extreme fire behavior continued there would be more evacuations. Smoke flowed down the Myrtle Creek basin and into the Kootenai River valley, particularly at night, affecting residents of Bonners Ferry and surrounding areas. Residents and visitors to the community were affected for a month based on the fact they had to drink poor quality, poor tasting water.

This fire provides insight into how a future fire could burn in the project area: not only in the Myrtle Creek Fire area as a re-burn; but also, 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).

2. The short- and long-term effects of proposed treatments and of taking no action.

<u>Effects of Selected Alternative:</u>

During a recent field trip to the project area, research scientist Russ Graham summarized the current conditions, appropriate treatments and potential effects in the project area as follows:

> Weather, fuels, location, and treatments all play a part. The fuels, and therefore the treatments, are what we can influence and what must be different. Graham suggested the use of concepts he calls "free selection" with a variety of species. (See discussion on pages 50 - 51.)
>
> Not only is the use of fire important, the most important thing in protecting water quality is what is left when we get through. We need to leave enough trees to provide an opportunity for more trees to grow and for wildlife habitat. Also, we need to make sure there are some openings for western

larch, white pine and ponderosa pine (seral species) to regenerate, and that we leave plenty of opportunities for trees to grow to 300-400 years of age.

The key to this project, and the forests on the district, is burn *severity*, which, because of soils issues, is more important than fire intensity. Land managers need to influence the severity first. We also want low intensity and reduced flame lengths so ground crews can safely fight fire.

The surface fuels, canopy base heights, and canopy density are key. Mechanical mastication can add to the variety of fuels treatments. Managers can also manipulate fuel moistures; for example, brush contains more moisture than trees, which reduces the likelihood of severe fire in these areas. Utilize mechanical means, and prescribed fire in the spring.

Fuels reduction treatments in the selected alternative will:

- Reduce ladder fuels and surface fuels on approximately 1,353 acres.
- Favor seral species.
- Buffer Myrtle Creek tributaries from high severity fire.
- The treatments planned for the dry site south-facing slopes will provide a fuels buffer for fires coming out of the southwest.
- Result in residual stands that will:
  - Have an open forest structure that will contribute to maintenance of fire-dependent species.
  - Be more in line with the historic range of conditions.
  - Be consistent with the 2001 Roadless Rule and Healthy Forests Restoration Act

In the event of a future fire, the fire behavior in the treated areas will be reduced from crown fire with potential flame lengths of 29 feet, to surface fire with potential flame lengths of approximately 1.3 feet. Rate of spread will be reduced from more than 4500 feet per hour (68.6 chains/hr) to about 165 feet per hour (2.5 chains/hr). Suppression forces will be able to employ direct attack strategies, whereas if these same areas are not treated, the crown fire hazard and fire behavior would not safely allow direct attack by hand crews. Fire severity given the current conditions was ranked as Moderate and High; following treatment it ranked as Low.

Effects of No Action:

In my decision I considered both Fire Risk[26] and Fire Hazard[27] in the project area. The 1926 fire and Myrtle Creek fire in 2003 are evidence that extreme fire behavior and large fire growth are possible and do occur in this part of the Selkirk Mountains. This, as well as other data on fire history, provided substantial evidence of risk of fire. Fire hazard, as shown repeatedly in the Fire and Fuels analysis is currently high and would remain so without treatment (FEIS Chapter 4). Where high fire risk and high fire hazard coincide, the likelihood of fire with unwanted effects is much more likely. Severe fires that impact water quality in the municipal watershed are unwanted events.

Fires in the type of fuels[28] that currently exist in the treatment areas can easily transform into crown fires. Crown fires exhibit a high resistance to control. Without treatment, the type of fire that would be

[26] Fire Risk: The likelihood of an ignition occurring as determined from historical fire records.

[27] Fire Hazard: The availability of fuels to sustain a fire using modeling results in fire behavior predictions

[28] Fuel Model 10: Typically characterized by a timber (tree) overstory with heavy timber litter and ladder fuels; generally burn with greater intensity with flame lengths exceeding four feet and greater. Direct attack suppression by hand crews is more difficult. These types of fuels also provide an easier route for fire to reach the ladder fuels and move into the tree crowns; thus making even aerial suppression resources ineffective for direct attack.

expected in these areas would exhibit a high resistance to control by suppression resources, similar to the fire in 2003, due to potential intensity and rates of spread. Professional Fire Behavior Analyst Ron Hvizdak addresses the fact that fires in fuel model 10 can easily transform into crown fires.

By not implementing the selected actions, approximately 1,353 acres would not be treated to reduce the hazard from crown fire. In the event of a fire in these areas, analysis shows that the fire behavior would likely exceed the capabilities for direct attack by hand crews, suppression production rates would be low, and fire severity would be a mix of moderate and high (FEIS, pg 2-39).

In summary, in the short-term there will be no reduction of fire hazard in the areas that were identified for treatments. Current threats to the municipal watershed will continue. Dry sites on the south aspects of Myrtle Creek and Snow Creek won't be treated; thus, potential fire behavior won't be reduced and rates of spread of fire within these areas won't be slowed.

In the long-term, analysis shows the following will happen:

- Surface fuel will continue to accumulate through mortality that would occur naturally or that may be exacerbated by competition for moisture and nutrients. Such conditions alter fire behavior and further remove fire regimes from what they were historically. Thus, fires today burn hotter and cause greater mortality than historic fires. (FEIS pg 4-51) Surface fire would be predicted to have potentially high flame lengths and high rates of spread (FEIS pg 4-54).
- The ground fuels (duff, roots, and buried woody material) would continue to build up. In the event of a fire, duff layers hold heat and can smolder for long periods of time. Soil damage, tree mortality, and smoke impacts can occur during these long durations of smoldering. (FEIS pgs 4-53, 4-54)
- The two areas of dry forest old growth stands, which are among the furthest removed from historical fire regime of any of the treatment areas, would not be treated. Ponderosa pine dominated sites, such as these, are experiencing fire behavior today that was uncommon in the past. Recent fire seasons (2000 through 2003) have shown that these forests are now among the most susceptible to crown fires (stand-replacing fires) and are burning as mixed or lethal fires with potential for more than 90 percent overstory mortality. (FEIS, pg 4-51) Without treatment the risk of losing the old growth is moderate to high; even low intensity surface fires can lead to tree mortality where smoldering fires occur in the ground fuels (FEIS, pg 4-59).
- Also, the IPNF Forest Plan and Fire Management Plan contain standards for fire suppression in designated old growth stands to prevent a loss of old growth due to fire. Thus, letting a wildfire burn in these areas, particularly under periods of high fire danger when mortality of overstory trees is a concern, is not an option for management. (FEIS, pg 4-51)

3. Describe desired future condition from a fire behavior perspective.

In the treated areas, fire behavior would be modified through fuels reduction activities. Creation of open forest structure would contribute 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.

For fire and fuels management, the desired condition is one in which fuels contribute to slow rates of spread and low flame lengths even during high to extreme fire danger. By developing more open stands, the selected alternative will create the desired condition. In the treatment areas fire behavior will be modified through fuels reduction activities. The desired fire behavior in the project area is low intensity, low severity, low flame lengths and corresponding slow rates of spread so that the watershed resources can be protected from negative impacts from crown fire and the high fire severity associated with it. Additionally, low intensity and low severity fire characteristics contribute to the number one objective

of fire suppression – firefighter and public safety. Following treatment the Fuel Model would be converted from a Fuel Model 10 to a Fuel Model 8 (see Fuel Model definitions in the footnotes and in the Glossary).

The current IPNF fire strategy is suppression (*confine*, *contain*, or *control*) outside of wilderness and proposed wilderness areas. Because the project area is not within a wilderness or proposed wilderness area, letting a wildfire burn is not an option. Suppressing a wildfire using direct attack to control the fire is the most desirable tactic to achieve the objectives in the Forest Plan. Suppression actions must hold life, firefighter, and public safety as the highest priority while minimizing resource value loss, economic expenditures, and the use of critical firefighting resources based on values at risk. Direct attack to control a fire is the most rapid and aggressive approach to accomplishing these priorities.

Crown fires exhibit a high resistance to control, as do surface fires with flame lengths and rates of spread beyond the limits of safe direct attack suppression. Surface fires, with low flame lengths (less than 4 feet) are desirable for safer and more effective direct attack suppression tactics and are generally associated with a fuel model 8[29] in forested stands. The most successful fire suppression tactics are direct attack tactics from the ground (FEIS page 4-63).

4. Provide maps of recent fires and photos of present conditions… describe with words, computer simulations, photos or a combination, what the area will look like with and without treatment.

As seen in photos on page 22, the stands of trees are dense and overcrowded from many years of fire suppression. The densely stocked stands are declining in health, making them more susceptible to insect and disease outbreaks. In such dense stands, the layered tree canopies have created ladder fuels, predisposing the stands to crown fire behavior. Heavy amounts of dead trees and limbs lying on the ground (as well as standing dead trees, brush and small trees) are also readily available fuels that will burn during a wildfire. Ground fuels, including duff, buried woody material, leaves, needles, and litter, have built up to levels that increase fire severity and intensity. In the sub-alpine forests, the stands have limited structural diversity and provide a continuous fuel bed.

In areas proposed for treatment, surface fuel conditions are generally categorized as Fuel Model 10. From a fire behavior standpoint, the heavy surface fuels, combined with ladder fuels and dense crowns contribute to risk of extreme fire behavior during high fire danger. In the event of a wildfire, flame lengths would be greater than the limit of safe direct attack suppression by hand crews. There would be an increased likelihood of fire reaching and climbing ladder fuels into tree crowns, making ground machinery and aerial resources ineffective for direct attack. (See FEIS Chapter 3 Fire and Fuels discussion for information about fuel models, fire behavior, suppression capabilities and limitations.)

Figure 13 (p. 29) shows what an area will look like following treatment. There will be a lack of ladder fuels, spacing between trees will be wider. While it would be expected that cured grasses and shrubs would carry a surface fire through such a treated stand, the treatments will make a big reduction in the possibility of a crown fire. Surface fires, with low flame lengths (less than 4 feet) are much more desirable than crown fires, because they allow safer more effective direct attack suppression tactics.

[29] Fuel Model 8 definition: light timber litter

This map shows northern edge of 1926 fire, 2003 Myrtle Creek Fire (dashed gray line), and the treatment units (solid gray areas). Keep in mind the 1926 fire started more than seven air miles south of Snow Creek and burned about 10 miles to the north, into Myrtle Creek.

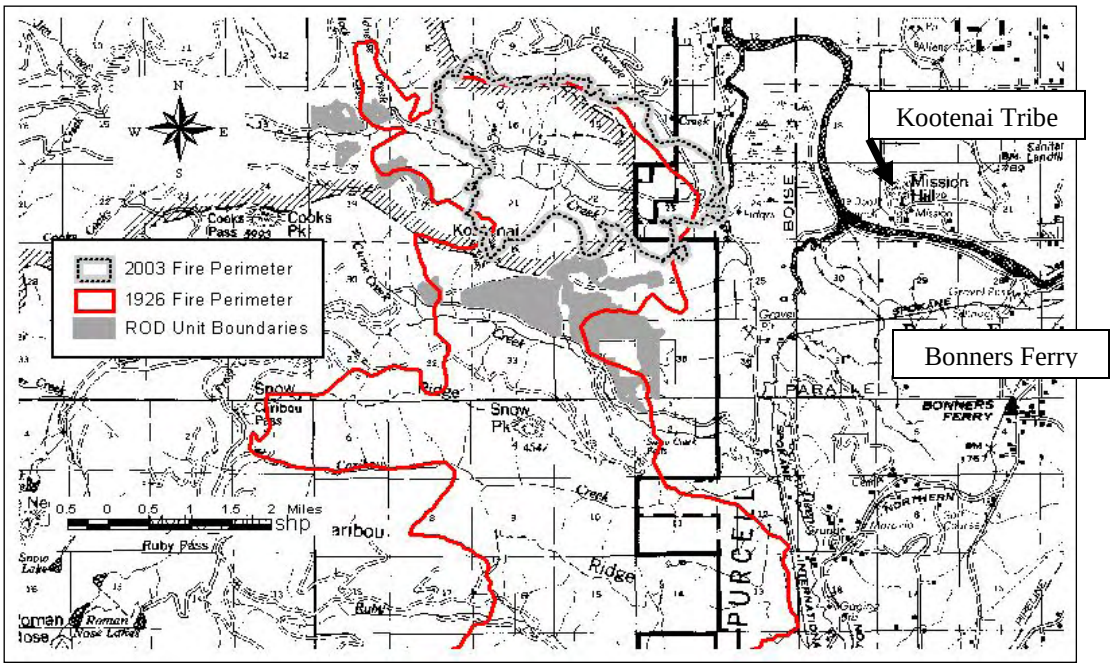

Figure 17. Map of 1926 and 2003 Fire Perimeters, Project Area Boundary, Treatment Units.

Use of Dr. Graham's Research

After the June 4, 2007 field trip we seriously considered the scientific information provided by Dr. Graham, Dr. Zack, and Ron Hvizdak with respect to prescriptions proposed in the FEIS and made prescription adjustments that we felt could be made without compromising the primary purpose of the project.

In moist forest types, we changed the prescriptions from *Irregular Shelterwoods* to *Variable Density Mosaics.* Where mechanical treatments occur in these units the residual tree density will vary considerably. These prescriptions will also include areas within treatment units that will receive no mechanical treatment and provide additional *variety* Dr. Graham suggested is critical in terms of reducing the risk of severe fire. Finally, we have reduced the total acres of treatments in section D (see Figure 2 map of analysis sections) from a total of approximately 205 acres to approximately 98 acres.

In dry forest types, I have chosen the term *Dry Forest Restoration* to replace *Group Selection* because I feel this term better describes to the public our intentions. Restoration forestry aims to develop a range of forest conditions that approximate those historically adapted to the fire regime, insects, diseases, and weather events common to a given area. It is not designed to achieve some discrete past condition or "snapshot in time." Instead, the objective is 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 (Arno and Fiedler 2005). As discussed in the FEIS (p. 4-72 and 4-73) we used historical reference conditions based on the best available science to develop these prescriptions in dry forest types. This science tells us these forest types were characterized by considerable variability in forest structure and our intention is to approximate this variability. In this context, these restoration prescriptions will help promote long-term development of dry forest structures that are less likely to burn severely, which in turn will reduce the risk of adverse effects to Bonners Ferry's drinking water.

Free Selection Concepts:

Computer generated graphics help illustrate stand structure with and without using free selection concepts (variable density mosaic) in treatment. Figure 18 shows what a typical moist forest stand would have looked like following treatment without incorporating free selection concepts from Graham and Jain (2005) and Graham (2007). Figure 19 shows what these same stands would look like incorporating some of these concepts. Dry site restoration treatments would look very similar to Figure 20.

Overall, in treated stands there will be a lack of ladder fuels and spacing between trees will be wider. While it would be expected that cured grasses and shrubs would carry a surface fire through such a treated stand, the removal of ladder fuels and wider spacing of tree crowns will make a big reduction in the possibility of a crown fire. Surface fires, with low flame lengths (less than four feet) are much more desirable than crown fires, as they allow for safer and more effective direct attack suppression tactics.

Figure 18. Treatment <u>Without</u> Variable Density Mosaic – Moist Forest Stand

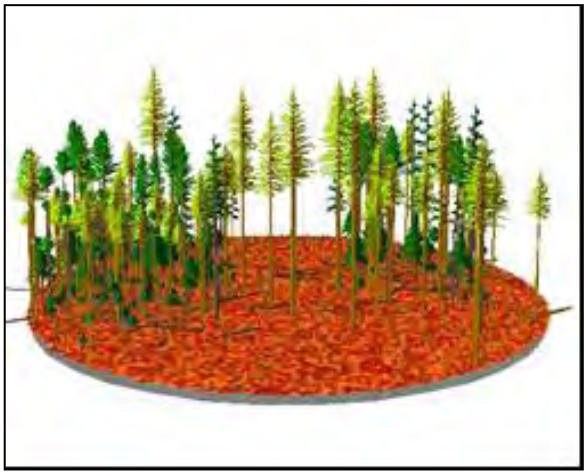

Figure 19. Treatment <u>With</u> Variable Density Mosaic – Moist Forest Stand

Figure 20 is an example of a dry forest stand with an appearance that is very similar to what dry forest stands would look like following treatment with the Dry Site Restoration concepts. The smaller trees have been removed and then the area was underburned through the use of prescribed fire.

Figure 20. Dry Site Restoration Treatment

Other Analysis Issues

Soils, wildlife and fisheries, while part of the goals for this project, did not drive the development of alternatives to the extent that the Key Issues did; however in recognition of their importance, they were analyzed in full and the results documented in the main body of the FEIS or in FEIS Appendix B. A brief overview of these issues follows. Other factors that were analyzed to varying degrees and were included in Appendix A of the FEIS included items such as rare plants and noxious weeds, cultural heritage, and air quality.

Soil Resource:

- Management activities could affect the soil.
- In the long run this could affect soil productivity, hydrology, water quality, and other ecosystem components in the area.

The National Forest Management Act (NFMA) directs the Forest Service to maintain the soil resource and soil productivity, thus soils were considered in the development of the design criteria and features for the project. Our compliance with Forest and Regional soil quality standards in discussed in the Forest Plan Compliance section at the back of this document.

Wildlife -- Habitat for wildlife did not drive the design of this project; the objective is to provide clean drinking water and reduce fire-related risks. Many of the wildlife concerns were addressed through project design criteria. The Working Group discussed the potential effects the proposed fuel reduction treatments could have on wildlife habitat, including potential effects on grizzly bear core habitat, woodland caribou and Canada lynx. As discussed earlier in this document with the exception of a minority opinion concerning fuels reduction treatments in dry forest old growth stands, the Working Group supported the proposed fuel reduction treatments and other activities.

Fisheries – Many of the fisheries concerns were addressed through project design criteria and use of guidelines in the Inland Native Fish Strategy (INFS). Fisheries analysis included: bull trout and westslope cutthroat trout which were analyzed in detail; Kootenai River white sturgeon, burbot, and interior redband trout which were not analyzed in detail.

Other Biological and Social/Economic Factors – Collectively, the IDT and District Ranger concluded that some issues (such as air quality and heritage resources) were appropriately addressed through alternative design, while others are outside the scope of this project. It was determined through assessment of potential effects, and review of agency and public comments that several issues could be addressed through criteria common to all action alternatives, site-specific implementation measures, fuels reduction treatments, timing of the proposed action, or opportunities for associated projects (such as those funded under Knutson-Vandenberg [•] [KV]). None of the KV projects or other opportunities is required for project implementation; however, they would enhance the biodiversity in the project area.

Issues not documented in detail in the main body of the FEIS were included in Appendix A or B of the FEIS: rare plants, noxious weeds, minerals, range, and social and economic factors (cultural/heritage

[•] Knutson-Vandenberg – The Knutson-Vandenberg Act (K-V) of June 9, 1930 (16 U.S.C. 576-576b; 46 Stat. 527), as amended by the National Forest Management Act of October 22, 1976 (16 U.S.C. 1600 et seq.) (FSM 1011), is the authority for requiring purchasers of National Forest timber to make deposits to finance sale area improvement activities needed to protect and improve the future productivity of the renewable resources of forest lands on timber sale areas. Activities include sale area improvement operations, maintenance and construction for reforestation, timber stand improvement, range, wildlife and fish habitat, soil and watershed, and recreation. (FSH 2409.19-01 – Authority). Proposed projects that are unlikely to be funded with K-V funds, should be evaluated for programming with appropriated funds (FSH 2409.19-03 Policy).

resources, visual quality, economics, public health and safety, effects on minority populations and low-income populations).

Section 6. Use of Healthy Forests Restoration Act Authority

The Healthy Forests Restoration Act of 2003 (P.L. 108-148) provides authorities on certain types of National Forest System (NFS) lands that are at risk of wildland fire. Title I authorizes projects that reduce the risk wildland fires pose to the quality of a municipal water supply or to its maintenance[30]. Congress granted this authority in part to address concerns and issues regarding hazardous fuels in municipal watersheds. This is precisely what the Forest Service was asked to do with the Myrtle Creek project.

Hazardous fuel treatment projects authorized under HFRA *cannot* take place in any of the following:

- Wilderness Areas
- Wilderness Study Areas
- Areas where removal of vegetation is prohibited by an act of Congress or Presidential proclamation (including prohibitions in the area's implementation plan).

Such projects must also meet the following requirements:

- Be consistent with the applicable resource management plans – in this case the Land and Resource Management Plan for the Idaho Panhandle National Forests (Forest Plan).
- Specifications concerning development and analysis of the proposed action and appropriate alternatives.
- Contain an evaluation of the effects of failing to implement the project.

The Myrtle Creek HFRA project meets HFRA requirements in the following ways:

Areas where HFRA projects can not take place. Sections 102(d)(1), (2), (3)

- Wilderness Areas or Wilderness Study Areas: None of the lands within the project area are designated wilderness or wilderness study areas; therefore, this project meets this requirement. (FEIS, pp. 1-8, 1-9)
- Areas where removal of vegetation is prohibited by an act of Congress or Presidential proclamation: No such prohibitions have been enacted by Congress or proclaimed by the President within the project area; therefore, this project meets this requirement.

Proposed Action and Analysis Requirements.

- Consistency with the Land and Resource Management Plan for the Idaho Panhandle National Forests (Forest Plan): The management actions I have selected for this project and the analysis of effects are consistent with the IPNF Forest Plan (Final EIS Chapter 4 and Appendix B).
- Specifications concerning development and analysis of the proposed action and appropriate alternatives: The Myrtle Creek FEIS meets Section 104 provisions concerning the number of alternatives to be considered, including the effects of not undertaking this project (No Action).

[30] Within this discussion, the HFRA Interim Field Guide includes a photo of the Myrtle Creek Fire with a caption regarding the fire's effects on the municipal water supply (within 48 hours sediment was degrading water taste and clarity).

Boundary County has adopted a Community Wildfire Protection Plan[31] and the selected alternative does implement the recommendations of that plan regarding the general location and basic method of treatments. I chose to also fully develop a no-action alternative (Alternative 1) to further clarify the differences in effects of implementing the project (both short-term and long-term effects), and the consequences of failing to take action. In recognition of discussions during the Myrtle Creek Working Group meetings and field trips, I also analyzed Alternative 5 in detail and considered two other alternatives (Alternative 3 and 4) that were not analyzed in detail for reasons explained in the discussion of other alternatives that were considered.

- Evaluation of the effects of failing to implement the project: This project meets this requirement. The IDT completed a thorough analysis of the effects that were anticipated to occur in the municipal watershed if this project were not implemented. The Team presented that information to the collaborative working group for discussion and consideration. I also reviewed the Draft and Final EISs to ensure that I fully understood the consequences of taking no action at this time and considered them in reaching my decision.

Additional HFRA Requirements.

- Administrative Review Prior to Decision**:** The administrative review was conducted in accordance with this requirement. The 'objection' period began after release and distribution of the Final EIS and was announced to the public by notification within the cover letter for the FEIS and via publication of a legal notice in the newspaper of record (Coeur d'Alene Press, Coeur d'Alene, Idaho) on April 9, 2007.

  Three letters of objections with requests for administrative review were received in a timely manner. Administrative review was conducted by the Reviewing Officer and responses were mailed to the lead objectors in a timely manner. One objection was set aside in accordance with the requirement at 36 CFR 218.6(a) that specifies objections may be filed by individuals and organizations who have submitted specific written comments related to the proposed authorized hazardous fuel reduction project during the opportunity for public comment provided during preparation of an environmental impact statement for the proposed authorized hazardous fuel reduction project as characterized in section 104(g) of the HFRA.

  Prior to release of this ROD, I asked the IDT to review and respond to the substantive objections. The objections and our responses are included in Appendix A of this ROD.

- Old Growth Maintenance/Restoration and Large Tree Retention: HFRA Sections 102(e)(2) and 102(e)(3) pertain to old growth; Section 102(f) pertains to large tree retention. The actions I have selected meet these requirements.

  Maintenance and Restoration of Old-Growth Forest Stands - 102(e)(2), 102(e)(3)

  My decision includes treatment on approximately 113 acres of dry forest old growth stands.

  In their present condition the long-term sustainability of dry forest old growth stands is in question. Due to current fuel loadings a fire would most likely result in a loss of the old growth component. This project will:

  - Reduce the risk of stand-replacing fire in dry forest old growth by approximately 62% in the treated stands, while overall reduction in all treated dry forest stands is

[31] Boundary County Wildland/Urban Interface Fire Mitigation Plan, 2003.

approximately 54%. This will be accomplished by removing ladder fuels from below and around large old growth trees.

- Increase overall quality and integrity of dry site old growth stands, through maintenance of scattered old growth ponderosa pine, western larch and Douglas-fir, and development of larger diameter trees.
- Retain trees from smaller size classes to provide additional structural diversity and replacement old growth for the future, especially ponderosa pine and larch.
- In order to maintain and improve the old growth attributes of the stands, they will be underburned following the fuels reduction treatments, and approximately every 10 to 25 years as needed to meet fuel management objectives.
- Restore dry forest old growth structure to a condition that is more sustainable in the long term.

Large Tree Retention - 102(f)

Projects are required 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, and

To maximize retention of large trees (in areas other than old-growth stands), as appropriate for the forest type, to the extent that the trees promote fire-resilient stands.

My decision meets these requirements:

- Ninety-five percent of the trees removed would be less than 14” dbh (diameter at breast height).
- Thinning will be used where appropriate in meeting fuels reduction objectives.
- Treatment areas have been strategically placed to serve as fuel buffers.
- Prescribed fire will be used to reduce fuels and modify fire behavior. Within the treated areas, fire behavior will be reduced from crown fire to surface fire, fire severity will be reduced from Moderate-High to Low. Potential rate of spread will be reduced from approximately 68.6 chains/hour to approximately 2.5 chains/hour.

- **<u>Collaboration between Federal agencies and local communities:</u>**

My decision meets this requirement as follows:

- The project was initiated by a request from the City of Bonners Ferry, Boundary County Commissioners, and Kootenai Tribe of Idaho.
- The Working Group was comprised of residents of Bonners Ferry and Boundary County, representatives of regional environmental groups, local agencies, and state and federal agencies such as the Idaho Department of Environmental Quality and U.S. Fish and Wildlife Service, and representatives from the Kootenai Tribe of Tribe.
- We participated in more than 18 months of collaboration with the Myrtle Creek Working Group prior to release of the Draft EIS. Public comments were considered and responded to between the Draft and Final EIS (including analysis of the additional Alternative 5).
- Because I respect the request for a project that would maintain Myrtle Creek as the primary source of municipal water and reduce fire-related risks to the watershed, and I also value the work done by the Myrtle Creek Working Group, I have taken extra time and deliberation in

reaching my decision. This included continuing dialogues with concerned groups following the close of the objection period (see Introduction section of this Record).

- **Performance monitoring and multi-party monitoring that includes communities and other diverse stakeholders.**

  My decision meets the monitoring requirements, as follows:

  - Monitoring includes multi-party monitoring of activities in the dry forest old growth treatment areas. During the collaborative discussions concerning treatments in the dry forest old growth areas, it was agreed that photo points would be established and photos taken by a local member of the Working Group (professional photographer) before and after treatments to document the effects of the fuels reduction treatments and the restoration of the dry forest old growth composition and structure. Photo points have been identified and initial photos taken to document the "before" conditions.
  - Water quality has been monitored for decades by the City of Bonners Ferry as part of their role in providing municipal water. The Forest Service outline for water quality monitoring will be followed in addition to that done by the City – with a bottom line of reviewing culverts and road erosion at a minimum of every two years for a six year period. Culvert and road conditions will be monitored through ongoing routine aspects of other Forest Service management activities.
  - Wildlife monitoring will be accomplished through methods already in use by the Forest Service.

Section 7. Consistency with Goals of the IPNF Forest Plan and Use of Best Available Science

Use of Best Available Science: *Projects implementing land management plans and plan amendments…must be developed considering the best available science in accordance with 219.35 (a) … and must be consistent with the provisions of the governing plan.*

My use of the best available science is described in "Rationale for My Decision". The need to employ the best science is not new, as Agency decisions have always required a sound technical basis. What constitutes best available science might vary over time and across scientific disciplines. My conclusion is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and as appropriate the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk. My decision meets this requirement.

Consistency with the Forest Plan: Objectives and standards for each resource are discussed in detail in Chapter 4 and Appendices A and B of the FEIS. The Selected Alternative meets my objective for Forest Plan consistency in the following ways.

Fire and Fuels – Under the selected alternative, Forest Plan compliance occurs through efficient fire protection and fire use to help accomplish land management objectives (Forest Plan, Chapter II, pages 10 and 38). My selection of this alternative is consistent with the Forest Plan as it proposes to use fuels treatment such as thinning, lopping, slashing, piling, pile burning and prescribed fire (underburning) to help meet the goals of Management Areas 1, 2, 7, and 9 across all of the proposed treatment areas. This

alternative includes prescribed underburning following fuels reduction treatments. Fuels reduction is the primary goal across the entire project area and all activities will be accomplished in accordance with that goal. Implementation of Alternative 2 will facilitate suppression in the event of a wildfire by reduced flame lengths, rates of spread, and crown fire potential.

Alternative 2 takes action to prevent the loss of old growth stands, as the proposed treatment is tailored to retain the large diameter individuals while removing the small diameter trees that are not only contributing to overcrowding, but increasing crown fire risk to the old growth because they act as ladder fuels.

Hydrology and Watershed **(**Forest Plan, p. II-33) – Best Management Practices have been designed and will be implemented so that activities and effects will protect the long-term productivity of the water resource and ensure state water quality standards will be met. Due to the fact the Myrtle Creek is a municipal watershed, all Source Water Protection BMPs under the Safe Water Drinking Act will be implemented. Activities meet the requirements of the Forest Plan (FEIS, section 4.2-L Compliance with Forest Plan).

Vegetation (Forest Plan, pp. II-8, II-31, II-32) – Treatment have been designed to move the structure and composition of the forest toward the desired future condition of a more sustainable ecosystem with reduced risks of uncharacteristic and unwanted wildfire, and greater diversity of wildlife habitat. Forest products and jobs will be provided as a result of the vegetation treatments, consistent with the multiple-use goals for the area. (FEIS sections 4.3 and 4.4)

Old Growth Habitat Management (Forest Plan, pp. II-29)

Standard 10(a) – This standard incorporates the definitions of old growth developed by the Regional Old Growth Task Force, documented in Green, et. al. (1992 - errata corrected September 2004), "Old Growth Forest Types of the Northern Region. USDA, Forest Service, Northern Region." The allocated old growth within the Myrtle Creek HFRA project area meets the old growth definitions included in Green et al.

The Myrtle Creek HFRA project complies with Forest Plan standard 10 (a).

Standard 10(b) – This standard 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).

Standard 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. These forests have a unique structure and composition that provides habitat for a wide range of plants, animals, and other biota. Forest Plan direction is to maintain at least 10 percent of the forested portion of the IPNF as 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.

In total, there are more than 27,500-forested acres in the vegetation assessment area and more than 28% of the acres are included in the IPNF's old growth allocation, which is within the estimated HRV of 15-35% for the North Zone forests.

The Myrtle Creek HFRA project complies with Forest Plan standard 10 (c).

Standard 10 (d) – 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.

The Myrtle Creek HFRA project complies with Forest Plan standard 10 (d).

Standard 10(e) – At the Forest level, 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).

Standard 10 (f) – 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).

Standard 10 (g) – This standard states that roads should be planned to avoid old-growth management stands to maintain unit size. No roads will be built through old growth under either action alternative (Alternative 2 or 5).

The Myrtle Creek HFRA project complies with Forest Plan standard 10 (g).

Standard 10 (h) –Existing grazing allotments will be honored, however, a long-term objective should be to minimize or exclude domestic grazing within old-growth stands. New allotments in old-growth stands will not be allowed. There are no grazing allotments in the Myrtle Creek HFRA project area, and consequently, no allotments in old growth. Furthermore, no new allotments are planned for the area.

The Myrtle Creek HFRA project complies with Forest Plan standard 10 (h).

Standard 10 (i) –Goals for lands to be managed as old growth within those lands suitable for timber production are identified in the management area prescriptions. Only Management Areas 1, 2, 3, and 4 have specific Forest Plan old growth goals. The 2004 IPNF Forest Plan Monitoring report (p.71) shows those goals by management area, and what we have currently allocated for old growth. Current old growth allocations meet and far exceed these Forest Plan goals.

Reforestation (Forest Plan Standard II-32)

My decision includes planting of trees in Unit G1 after fuels reduction operations are completed.

Site preparation and fuel reduction activities are planned to provide appropriate sites for planting. Following site preparation (usually underburning), regeneration will occur through artificial (planting) and natural methods. Stands will be planted with seral species (white pine, western larch, and ponderosa pine) to promote stand structures and species composition, which reduce susceptibility to insect and disease damage. The best quality ponderosa pine, western larch, and white pine will be retained for natural seed sources. This is consistent with Forest Plan direction that "reforestation would feature seral tree species."

All stands proposed for regeneration harvests are on lands suitable for timber production and can be adequately restocked within five years of the final harvest. As directed by the Forest Plan, stands will be regenerated with trees from seed that is well adapted to the specific site conditions, and will be regenerated with a variety of species (Timber Standard 4 and 5, page II-32, Forest Plan). Forest Plan standards for reforestation will be met.

Soil – The selected alternative complies with Forest Plan and Regional Soil Quality Standards as follows:

IPNF Forest Plan Standards

The selected alternative meets the Forest Plan required 20 percent impact limit except for Unit G3. In recognition of this, decompaction of the existing skid trails and a non-system road are planned and are estimated to reduce detrimental soil disturbance levels in Unit G3 below the current 21 percent. This would be a trend towards a net improvement over currently existing conditions in this unit, therefore moving towards meeting the Forest Plan Standard.

The Regional guidance to follow the coarse woody debris recommendations of Graham et al. (1994) would adhere to the Forest Plan Standard to maintain sufficient microorganism populations to maintain site productivity.

Provisions to maintain sufficient nutrients would be made in areas of whole-tree logging by retaining submerchantable material and breakage (such as foliage and limbs during fuels reduction activities) on site to contribute to the nutrient pool.

Management area direction to implement Best Management Practices would be included (see Chapter 2 and Appendix C).

Northern Region Soil Quality Standards

Management practices will not exceed the recommended 15 percent for all individual activity areas except Unit G3. The Regional guideline provides that in areas where more than 15 percent detrimental soil condition exists from prior activities (Unit G3), the cumulative detrimental effects from project implementation and restoration will not exceed the conditions prior to the planned activity and will move towards a net improvement in soil quality. This will be achieved through decompacting skid trails and a non-system road to reduce existing soil disturbance level.

Decompaction efforts are estimated to reduce the existing soil disturbance level in Unit G3 from 21 percent to between 11 and 15 percent.

Organic matter layer thickness will be retained as appropriate for local conditions. Large woody debris will be maintained at recommended volumes (Graham et al. 1994) in each activity area.

Inventoried Roadless Areas (Forest Plan p. II-4) – Direction for Inventoried Roadless Areas is established through the direction for the Management Area within which they are located. Forest Plan direction pertaining to the roadless resource is primarily reflected in the MA 10 designation for semi-primitive recreation. Goals for the MAs will be met to varying degrees depending on the location on the MA, and the type of proposed fuel reduction treatments. No activities will occur in MA 11 (proposed wilderness); therefore, the selected alternative will be consistent with MA 11 direction to manage lands proposed for wilderness to protect their wilderness characteristics.

Wildlife (Forest Plan, pp. II-5, II-6, II-26 through II-29) – by trending the vegetation toward desired conditions that will promote long-term persistence, diversity and stability of wildlife habitat. Project design features and criteria assure that activities are consistent with Forest Plan direction to manage the habitat of TES and MIS species, old growth, and snag management (FEIS, Appendix B).

Canada Lynx: Prior to amendment of the Forest Plan this species and its habitat were managed according to guidelines outlined in the Lynx Conservation Assessment Strategy. The selected alternative is consistent with the LCAS, and therefore meets Forest Plan direction to "contribute to the conservation and recovery of the listed species on the Forest (Forest Plan, p. II-6)

The legal notice for the Record of Decision for the Northern Rockies Lynx Management Direction was published on June 15, 2007. Since the purpose of this project is fuels reduction within the WUI, this project should qualify as an exemption to standard VEG S6 in the Management Direction. Regardless, treatment units were screened under the LCAS to ensure they were not high quality hare habitat. Therefore, the selected alternative complies with the standards of the Northern Rockies Lynx Management Direction

Grizzly Bear: The selected alternative is consistent with Forest Plan direction to manage the habitat of species listed under the Endangered Species Act (Forest Plan, p. II-6 and FEIS, Appendix B-22). Consultation with US Fish & Wildlife Service has been completed and they concur with our finding of *"may affect, but is not likely to adversely affect"* grizzly bears (project file letter dated 8/6/07).

Sensitive Species: Black-backed woodpecker, flammulated owl, northern goshawk, and fisher.

The selected alternative is consistent with the Forest Plan direction to manage the habitat of species listed in the Regional Sensitive Species list to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act. (Forest Plan, pg. II-28, and FEIS, Appendix B)

Management Indicator Species: Pileated woodpecker.

The selected alternative is consistent with the Forest Plan direction for old growth habitat management and meets or exceeds Forest Plan goals and objectives for managing snag habitat (Forest Plan, Appendix X Snag Management)

Fisheries (Forest Plan, pp. II-29 – II-31) – The project is in compliance with the Inland Native Fish Strategy (INFS) Amendment to the Forest Plan by following the standards and guidelines for General Riparian Management, and Watershed and Habitat Restoration (FEIS, 4.2-L).

The selected alternative meets the requirements of the IPNF Forest Plan for fisheries resources, as amended by the Inland Native Fish Strategy and the Fry Emergence Amendment.

INFS Standards and Guidelines (USDA A7-13; 1995) – The following categories of INFS standards and guidelines apply to the alternatives for the Myrtle HFRA Project and will be met by the selected alternative as explained in detail in Appendix B of the Final EIS.

Timber Management
Roads Management
Fire and Fuels Management
General Riparian Area Management
Watershed and Habitat Restoration
Fisheries and Wildlife Restoration

Recreation (Forest Plan, pp. II-3, II-24, II-25) – The selected alternative is consistent with the Forest Plan as Forest Plan goals for the Management Areas will be met. No activities will occur in MA11 Proposed Wilderness.

Section 8. Consistency with Laws and Regulations, Forest Service Policy, and Other Policies

Forest Service policy, regulations, and laws are part of the framework for my decision. I have determined that my decision is consistent with applicable laws, regulations and agency policy. Required findings are summarized below.

Hydrology and Watershed

The selected alternative meets:

Clean Water Act
The Clean Water Act (as amended, 33 U.S.C. 1323) directs the Forest Service to meet state, interstate and local substantive as well as procedural requirements with respect to control and abatement of pollution in the same manner and to the same extent as any non-governmental entity. The Forest Service has the statutory authority to regulate, permit and enforce land-use activities on the National Forest System lands that affect water quality.

This project is consistent with requirement of the Clean Water Act (33 U.S.C. 1251). Sediment and heavy metals (the pollutants of concern) will not permanently increase in the municipal waters of Myrtle Creek. Risks to beneficial uses will not be changed. There will be no detrimental increase in sediment through management activities in Myrtle, Snow or Deep Creeks. (FEIS, pg. 4-42)

Safe Drinking Water Act
The project will adhere to the Source Water Protection BMPs under the Safe Water Drinking Act by conducting watershed restoration, fuels reduction, and road management activities, and project monitoring. Source Water Protection was included in the design of the monitoring plans.

U.S. Army Corps of Engineers Discharge, Dredge and Fill Permits
The fuels reduction and road maintenance will not affect wetlands or streams. The stream crossing upgrades under "Watershed and Fisheries Improvement Opportunities" are covered under the "silvicultural road exemption" of the nationwide permit. No wetlands will be affected by the reconstruction work.

Water Quality Limited Stream Segments
Using the currently approved 2002 Integrated Report, 14 designated Assessment Units are located within the project and cumulative effects analysis areas. No cumulative detrimental effects are expected with implementation of this project. By following site specific BMPs, INFS guidelines, and RHCA buffers, there will be no detrimental cumulative effects to the streams, or net increase in siltation, suspended solids, or thermal modifications, thus no violation to the TMDL regulations or Clean Water Act.

Antidegradation Policy for Beneficial Uses
Application of the antidegradation policy will be met; there will be no detrimental impacts to beneficial uses.

Idaho Forest Practices Act
Best Management Practices or Soil and Water Conservation Practices would be applied. All activities are in compliance with the guidelines in the Soil and Water Conservation Handbook. See Appendix C for additional information.

Executive Order 11988 - Floodplain Management
This project meets the requirements of Executive Order 11988, which apply to protection of floodplains. These features are protected through implementation of BMPs and Forest Plan Standards and Guidelines. The riparian restoration components of the project are designed to improve condition of riparian areas and floodplain function.

Executive Order 11990 - Protection of Wetlands
This project meets the requirements of Executive Order 11990, which apply to protection of wetlands. These features are protected through implementation of BMPS and Forest Plan Standards and Guidelines. The riparian restoration components of the project are designed to improve condition of riparian areas and floodplain function.

Executive Order 13084 - Consultation and Coordination with Indian Tribal Governments
This project meets the requirements of Executive Order 13084, which applies to consultation and coordination with Indian Tribal Governments. This feature was followed through the Healthy Forest Restoration Act (HFRA) public collaboration process. A total of ten public meetings and field trips of the Myrtle Creek Working Group sub-committee of the Kootenai Valley Resource Initiative (KVRI) were held. The Tribe holds a seat on the 11-member KVRI Board, and is also a member of the Joint Powers who formed KVRI. (Joint Powers include the City of Bonners Ferry and Boundary County Commissioners.)

Idaho Stream Channel Protection Act/Idaho Stream Alteration Rules
This project meets the required BMPs in the Idaho State Water Quality Standards (IDAPA 37.03.07) and (IDAPA 58.01.02.350.03).

2001 Roadless Rule

The selected alternative is consistent with the 2001 Roadless Rule, as follows:

The selected alternative is consistent with the January 2001Roadless Rule, incorporated at 36 CFR § 294.13(1) and 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;

After reviewing the information in the Final EIS and project file, I have made the following determinations:

The trees to be removed in this project consist of generally small-diameter timber.

> The variable density mosaic and dry site restoration are in stands generally dominated by trees smaller than 10 inches DBH. The large diameter ponderosa pine, western larch, white pine, and Douglas-fir (in addition to large-diameter trees of other species) will be retained in the overstory.
>
> The thinning prescriptions will focus on retention of the biggest and best trees available in the stand. The average size of the trees removed will 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.

The January 2001 Roadless Rule generally prohibits road construction and timber removal in inventoried roadless areas of National Forest Systems lands, with certain exceptions. As stated in section 294.13(b)(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 section 294.11. … (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;"

For the following reasons, implementation of the selected alternative is in compliance with this exception:

> Size of trees:
>
> 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" diameter at breast height

(dbh) as generally smaller timber. Field data indicates 87% of the trees to be cut for fuels reduction in the Inventoried Roadless Areas will be less than 12" dbh. (See field data Table 1 in Appendix A Response to Objections.)

The term "generally smaller diameter timber" is described in the FEIS on pp. 4-88, 4-89, and 4-94 through 4-97. 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".

When considered under the guidelines of the Regional Mapping Technical Guide (USFS 2005) which uses 10" dbh as a breakpoint in classifying generally small trees, field data indicates that about 66% of the trees to be cut in the fuels reduction treatment areas within the inventoried roadless areas will be less than 10" dbh.

<u>Treatments will be used to maintain or restore characteristics of ecosystem composition and structure:</u>

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 (reduce crown fire behavior), to help protect Myrtle Creek and its tributaries. Removing the smaller timber (ladder fuels) is necessary to meet the Purpose and Need of the project by trending portions of the 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 fuel reduction treatments parallel the disturbance regimes found historically in the Myrtle and Snow Creek ecosystems.

The fuel reduction treatments would leave a mosaic of approximately 20 to 40% canopy cover composed of the largest overstory trees. Treatments would also incorporate variable density mosaic concepts where groups, clumps, and stringers of un-cut trees are retained. The treatments would not negatively impact the riparian buffer zones or the sensitive soils adjacent to Myrtle Creek and its tributaries as did the 1926 and 2003 fires (FEIS, Figure 4.11, page 4-91).

<u>Endangered Species Act (ESA)</u>

The IPNF North Zone wildlife biologist, fisheries biologist, and botanist evaluated the effect of the selected alternative with regard to threatened and endangered wildlife, fish and plant species. Findings and the rationale are disclosed in the FEIS (Appendices A and B) and summarized in the Biological Assessments and Biological Evaluations (FEIS Appendix B and project files).

The Selected Alternative is consistent with the Endangered Species Act. As required by Section 7 of the Endangered Species Act, we have consulted with the U.S. Fish and Wildlife Service regarding the activities and anticipated effects of this project. They have concurred with our findings (letter dated August 6, 2007 in project file).

Wildlife – The selected alternative meets wildlife requirements of the Endangered Species Act (FEIS, Appendix B and project file Amended BA dated July 20, 2007.) The U.S. Fish and Wildlife Service concurs with the biological findings for this project (project file letter dated August 6, 2007).

The following species will not likely be affected by the selected alternative: woodland caribou, northern gray wolf or the bald eagle (FEIS, pg. B-2).

For the Canada lynx, the selected alternative *may affect* but is *not likely to adversely* affect Canada lynx or habitat.

For the grizzly bear, implementation of Alternative 2 (deferring Units B1, B3, B6, and G9) *may affect, not likely to adversely affect* grizzly bears or habitat. (Amended BA, July 20, 2007, and concurrence letter August 6, 2007 - project file)

Fisheries – The selected alternative meets fisheries requirements of the Endangered Species Act, as it will have *no effect* on Kootenai River White Sturgeon. No suitable habitat is present within the project area and the project lies outside designation of critical habitat for sturgeon. For bull trout, the selected alternative *may* affect but is *not likely to adversely affect* the species, and would not jeopardize their continued existence. There is no designated critical habitat for bull trout within the cumulative effects area. (FEIS, Appendix B and USFWS letter of concurrence dated August 6, 2007.)

Plants – There are no federally listed Threatened or Endangered plant species suspected to occur in the project area. Surveys and searches of records included Water howellia, Ute ladies'-tresses and Spalding's catchfly. (FEIS, Appendix A and Project File)

Executive Order 12962: The selected alternative is consistent with this executive order regarding aquatic systems and recreational fisheries. Short-term effects may affect westslope cutthroat trout individuals, but would not lead toward a trend in federal listing. Long-term effects (i.e., net reduction in sediment) are expected to benefit westslope cutthroat trout survival and habitat.

State of Idaho Governor's Bull Trout Plan: The selected alternative is consistent with the direction in the Governor's Bull Trout Plan. Long-term effects from the decommissioning of roads with known sediment sources are expected to benefit bull trout and their habitat.

Healthy Forests Restoration Act

The Healthy Forests Restoration Act of 2003 (P.L. 108-148) provides authorities on certain types of National Forest System (NFS) lands that are at risk of wildland fire. Title I authorizes projects that reduce the risk wildland fires pose to the quality of a municipal water supply or to its maintenance.

Hazardous fuel treatment projects authorized under HFRA cannot take place in any of the following:

- Wilderness Areas
- Wilderness Study Areas
- Areas where removal of vegetation is prohibited by an act of Congress or Presidential proclamation (including prohibitions in the area's implementation plan).

Such projects must also meet the following requirements:

- Be consistent with the applicable resource management plans – in this case the Land and Resource Management Plan for the Idaho Panhandle National Forests (Forest Plan).
- Contain an evaluation of the effects of failing to implement the project.

The selected alternative is consistent with the HFRA, as follows:

The project area is not located within any wilderness or wilderness study areas. Nor does it include any areas where vegetation removal is prohibited by an act of Congress or a Presidential proclamation.

The activities and their anticipated effects are consistent with the Forest Plan and Forest Plan Amendments. The development and analysis of the proposed action and alternatives were consistent with HFRA requirements. Review of the Final EIS and project record show the Interdisciplinary Team conducted and documented a thorough evaluation of the effects of failing to implement the project (identified as Alternative 1 – No Action).

The selected alternative is consistent with Boundary County's Wildland Fire Mitigation Plan regarding protection of the Myrtle Creek municipal watershed and the associated infrastructure.

The Myrtle Creek Working Group sub-committee of KVRI (Kootenai Valley Resource Initiative) provided a forum for public collaboration in development of the proposed action and alternatives. The Kootenai Tribe of Idaho, City of Bonners Ferry, and Boundary County Commissioners were all participants in the working group meetings and field trips. More information is available in the Introduction section of this Record.

National Environmental Policy Act As described in the FEIS, the National Environmental Policy Act (NEPA) requires analysis of projects to ensure the anticipated effects are considered prior to project implementation (40 CFR 1502.16). The analysis for the Myrtle Creek HFRA project followed the guidelines of NEPA as provided by the Council on Environmental Quality (CEQ). In a June 24, 2005 memo CEQ provided additional guidance on analysis of environmental effects.

Alternatives were developed based on existing conditions, Forest Plan goals and objectives, and public concerns and recommendations. We considered a total of three alternatives in detail, including a No Action alternative as required by NEPA (FEIS, section 2.7); two additional alternatives were considered but eliminated from further study because they either did not meet the project's purpose and need or were infeasible (FEIS, section 2.7). I find the range of alternatives is appropriate given the scope of the proposal and the purpose and need for action

Clean Air Act The Forest-wide standard for air quality is to coordinate all Forest Service management activities to meet the requirements of the State Implementation Plans, Smoke Management Plan and Federal air quality standards. This will be done with the Selected Alternative. Burning will be conducted by the Forest Service in a manner that will meet air quality requirements. I find that this project meets the Clean Air Act and state monitoring requirements through coordination with the State prior to burning, and the use of burning techniques that minimize smoke emissions (FEIS, section 4.3-D, Air Quality and Smoke Emissions).

Environmental Justice Executive Order In February 1994, President Clinton signed Executive Order 12898, requiring federal agencies to conduct activities related to human health and the environment in a manner that does not discriminate or have the effect of discriminating against minority and low-income populations (Project Files, Environmental Justice).

Although low-income and minority populations live and recreate in the vicinity, activities under the Myrtle Creek project will not discriminate against these groups. Executive Order 12898 (issued in 1995) required federal agencies to identify and address the issue of environmental justice (i.e. adverse human health and environmental effects of agency programs that disproportionately impact minority and low income populations). At this time, no minority or low-income populations have been identified in the Myrtle Creek HFRA project analysis area.

Based on past experience with similar projects on the Bonners Ferry Ranger District, none of the action alternatives would substantially affect minority or low-income individuals, women, or civil rights. The implementation of this project is expected to provide job opportunities in communities such as Bonners Ferry, Moyie Springs, and Naples, Idaho. Some of these communities include minority populations that may benefit from the economic effects. Small or minority-owned businesses would have an opportunity to compete for some of the work. (FEIS, section 4.7-C.3)

Natural Resources Agenda On March 2, 1998, Forest Service Chief Mike Dombeck announced the Forest Service Natural Resource Agenda. The Agenda provides the Chief's focus for the Forest Service, and identifies specific areas where there will be added emphasis. The following discussions briefly describe consistency of the Myrtle Creek project with those specific areas.

Watershed health and restoration – As stated throughout the documentation of this project, the primary goal for this project is to *maintain Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry*. Through a combination of fuels reduction treatments that will lessen the crown fire hazard and reduce fire behavior in treated areas, road decommissioning and road improvement and maintenance activities, the risks to beneficial uses will be reduced. Road improvements and decommissioning will have a net beneficial effect.

Sustainable forest ecosystem management – The dry forest old growth in the project area is currently at risk of stand-replacing fires. Fuels reduction and silvicultural treatments in dry forest old growth were designed to address the concern that with the current levels of fuel loadings in these areas, a fire would most likely result in a loss of old growth component. The dry site restoration treatments are designed using research from Graham & Jain (2007), Pfister, et.al (2000), Stone et.al. (1999) and Arno and Fiedler (2005).

Recreation – Addressed by managing existing and future recreation opportunities in ways that enhance and protect the quality of the natural resources in the Myrtle Creek project area.

National Fire Plan

> "Operating principles directed by the Chief of the Forest Service in implementing this include: firefighting readiness, prevention through education, rehabilitation, hazardous fuel reduction, restoration, collaborative stewardship, monitoring, jobs, and applied research and technology" (from Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy, October 2000 pgs.11-12).

The restoration portion of this strategy states, "Restore healthy, diverse, and resilient ecological systems to minimize uncharacteristically intense fires on a priority watershed basis. Methods will include removal of excessive vegetation and dead fuels through thinning, prescribed fire, and other treatment methods." For this project the treatment methods will be variable density mosaics, dry site restoration, and irregular shelterwood (Unit G1).

The Myrtle HFRA project is consistent with the National Fire Plan direction to manage and reduce overly dense forest vegetation through development of actions which are designed to restore resilient ecosystems and that will sustain the resources through time. (FEIS Chapter 1, pg. 1-7)

National Historic Preservation Act The project area has been surveyed for cultural resources. This project has identified and mitigated potential effects to cultural resources (FEIS, section 2.9, and Appendix A, section A-2).

Recognizing the potential for unidentified sites to be encountered and disturbed during project activity, any future discovery of heritage resource sites or caves will be inventoried and protected if found to be of cultural significance. These sites will be avoided, protected, or potential effects will be mitigated in accordance with the National Historic Preservation Act of 1966.

Based on the successful protection of cultural resources on the IPNF through cooperation with the Idaho State Historic Preservation Office, these measures have been found to be effective (IPNF Forest Plan Monitoring Report for 1999, page 17).

National Forest Management Act (NFMA) Consistency

NFMA consistency requirements: This decision is consistent with the following provisions.

Consistency with ESA: The selected alternative is consistent with Forest Plan direction to manage the habitat of species listed under the Endangered Species Act (Forest Plan, p. II-6).

Maintaining Diversity: The Forest Plan provides for maintaining diversity through management standards. This project is consistent with the Forest Plan, as stated above. The Biological Evaluations and Biological Assessments confirm that this project will not impact the viability of sensitive, threatened, or endangered species. (Amended BA – grizzly bear, 07/27/07; concurrence letter 08/06/07; FEIS, Appendix B p. B-1 through B-39; B-40 through B-55; Appendix A, errata sheet p. 3; and project file: Fisheries BA dated 12/06/06, Biological Opinion dated 3/21/07.)

1. Suitability for Timber Production (16 USC 1604(k)) *No timber harvest, other than salvage sales or sales to protect other multiple-use values, shall occur on lands not suited for timber production.*

This project includes lands that were designated as unsuitable for timber production in the Forest Plan (Management Area 9); however, Forest Plan Timber Standard 3, page II-32, allows for changes in land suitability classification based on recommendations of a certified silviculturist. All or portions of Units F1, G1, G2, G8, G9, and G10 have been field reviewed (Units G1, G8, G9, and G10 contain the dry forest old growth that is at risk from insect, disease and stand-replacement fire.)

Some portions of Units G1, G2, G8, and G9 include rocky areas that are unsuitable for timber production, but the timbered areas included in these stands meet the conditions for suitability based on the basal areas and the minimum biological growth potential (20 cubic feet/acre/year). Attempting to delineate the rocky areas as separate stands would be infeasible in terms of stand database management and it would also be inappropriate in terms of managing large landscapes.

The selected treatment units are forested well above the 16 percent stocking requirement. Typically, these areas exceed 80 percent stocking. In addition, timber stand exam and reconnaissance plots show that the areas selected for treatment units are producing well above the required 20 ft^3/ac/yr. Excluding the rocky areas, technology is available to reforest all of these areas.

In accordance with the Forest Plan standard, all or portions of Units F1, G1, G2, G8, G9, and G10 have been re-classified as suitable for timber production. (project file documentation letter dated 7/12/06, signed by certified silviculturist)

2. Timber Harvest on National Forest Lands (16 USC 1604(g)(3)(E)): *A Responsible Official may authorize site-specific projects and activities to harvest timber on National Forest System lands only where:*

a. *Soil, slope, or other watershed conditions will not be irreversibly damaged (16 USC 1604(g)(3)(E)(i)).*

The design of fuels reduction treatments and road management activities include features designed specifically to protect water (FEIS section 2.9-B.1) soils (FEIS section 2.9-B.2), and fisheries (FEIS section 2.9-B-3), including criteria for road reconstruction and maintenance (FEIS section 2.9-A.h). The soil, slope or other watershed conditions will not be irreversibly damaged.

b. *There is assurance that the lands can be adequately restocked within five years after final regeneration harvest (16 USC 1604(g)(3)(E)(ii)).*

Technology and knowledge does exist to comply with this requirement. The IPNF have traditionally had high success rates for both artificial and natural regeneration. The vegetation analysis is provided in Chapter 4 of the FEIS (FEIS section 4.4-B) and in the project file documents this assurance.

c. *Protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat (16 USC 1604(g)(3)(E)(iii)).*

My decision includes use of Best Management Practices, and criteria to protect wetlands, seeps, bogs, wallows and springs (FEIS section 2.9-B-1). Fuels reduction treatments are not likely to seriously and adversely affect water conditions or fish habitat (FEIS Table 2.12 Aquatics Summary and Comparison of Effects, Appendix B.2-C Fisheries Environmental Consequences).

d. *The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber (16 USC 1604(g)(3)(E)(iv)).*

Economic factors were considered in my decision, and the selected alternative does have economic value (FEIS Appendix A section A.2 and Table A-1 Project Feasibility and Financial Efficiency Summary). However, the selected alternative was chosen primarily for the reasons documented in this Record of Decision (meeting the community's goals for their municipal watershed as developed through the collaborative efforts of the Working Group) and not because of economic value.

3. Clearcutting and Even-aged Management (16 USC 1604(g)(3)(F)): Insure that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method on National Forest System lands only where:

a. *For clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan (16 USC 1604(g)(3)(F)(i)).*

My selected alternative included Unit G1, which is an irregular shelterwood fuels reduction treatment about 94 acres in size and will be reforested. The FEIS (Chapter 3, section 3.5) and the field reconnaissance data (project file) make up the site-specific prescription determinations that are consistent with the Summary of Timber Information and Vegetation Management Practices (Forest Plan, Appendix A) and the Northern Region requirements.

b. *The interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area* (16 USC 1604(g)(3)(F)(ii)).

The Final EIS contains the results of the interdisciplinary review of these items for the project, which is consistent with the multiple use of the general area. Project file documentation includes the Economic Summary Report, timber appraisal spreadsheet, and economic transactions report.

c. Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain (16 USC 1604(g)(3)(F)(iii)).

Esthetics were considered, but are not an objective of this fuels reduction project. A Visuals Report was prepared (project file document dated 8/31/05).

d. Cuts are carried out according to the maximum size limit requirements for areas to be cut during one harvest operation, provided, that such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm (FSM R1 supplement 2400-2001-2 2471.1, 16 USC 1604(g)(3)(F)(iv)).

Openings greater than 40 acres have been incorporated into the analysis for watershed/hydrology, wildlife, fire/fuels, and visuals. The Regional Forester approved exceeding the 40-acre limit (project file letter dated January 8, 2007).

e. Such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource (16 USC 1604(g)(3)(F)(v)).

The design of fuels reduction treatments and road management activities include features designed specifically to protect water (FEIS section 2.9-B.1) soils (FEIS section 2.9-B.2), and fisheries (FEIS section 2.9-B-3), including criteria for road reconstruction and maintenance (FEIS section 2.9-A.h).

4. Stands of trees are harvested according to requirements for culmination of mean annual increment of growth (16 USC 1604(m)).

As stated in FSM 1921.12(f), the culmination of mean annual increment of growth requirement does not apply to the following types of treatments that are part of this decision:

- Non-regeneration harvests, such as thinning or other stand improvement measures.
- Management of uneven-aged stands or to stands under uneven-aged silvicultural systems.
- Harvest to meet multiple-use objectives other than timber production.

5. Construction of temporary roadways in connection with timber contracts, and other permits or leases: *Unless the necessity for a permanent road is set forth in the forest development road system plan, any road constructed on land of the National Forest System in connection with a timber contract or other permit or lease shall be designed with the goal of reestablishing vegetative cover on the roadway and areas where the vegetative cover has been disturbed by the construction of the road, within ten years after the termination of the contract, permit, or lease either through artificial or natural means. Such action shall be taken unless it is later determined that the road is needed for use as a part of the National Forest Transportation System (16 USC 1608(b)).*

An interdisciplinary team comprised of engineering, fire, wildlife, aquatics, and vegetation management personnel met to examine the access needs for the management of the Myrtle Creek project area. Recommendations are based on field review, corporate knowledge, and prior analysis of the area. The only temporary road construction included in my decision is the re-opening of approximately 0.6 miles of Road 402-C which will be designed by a Forest Service Engineer and monitored by an Engineer's Representative during construction. At the end of the fuels reduction treatments and associated activities, the temporary road will be decommissioned under consultation with a hydrologist and will be revegetated within ten years. (FEIS, p 2-24)

6. Standards of roadway construction: *Roads constructed on National Forest System lands shall be designed to standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources (16 USC 1608(c)).*

As stated under 5 above, construction includes only temporarily re-opening an existing undriveable road. The design is according to standards appropriate for the intended use and considered safety, cost of transportation and impacts on land and resources. (Project file: Roads Analysis Process with Recommendations)

- Primary need for access provided by the temporary road is fuels reduction on National Forest System lands.
- The IDT considered the objectives and issues for this project and evaluated the resource risks and benefits for this temporary road.
- IDT recommendation was to re-open approximately 0.6 mile of the road, then decommission the entire length of Road 402-C (approximately 1.0 mile) when activities are completed.

Forest Service Road Management and Transportation System Rule

In January 2001, the Forest Service issued a Final Rule regarding specific revisions to the road system rules (at 36 CFR part 212), and to Forest Service administrative directives governing transportation analysis and management.

A Roads Analysis was completed for the Myrtle Creek HFRA project (project file).

- No changes are made to existing road management policies under the proposed project.
- No new permanent forest system roads will be developed.
- The forest system roads used to accommodate timber hauling from the project sites will have their surface improved and drainage systems upgraded as necessary to reduce sediment delivery into local stream systems.

Environmentally Preferred Alternative

Alternative 2 as documented in the Final EIS is the environmentally preferred alternative.

Information Contact

For further information concerning the Myrtle Creek HFRA Project, contact:
District Ranger Linda McFaddan or Project Leader Doug Nishek at:

Bonners Ferry Ranger District
6286 Main Street
Bonners Ferry, ID 83805
Telephone: (208) 267-5561

Section 9. Implementation of My Decision

Timing of Authorized HFRA Project Decisions (35 CFR 218.11) To provide reasonable assurance that objections are received before decision making, paragraph (b) states that a decision can be made on a proposed authorized hazardous fuels reduction project on the fifth business day following the close of the filing period when no timely objections are received. However, for all environmental impact statements, there must be a minimum of 30 days between notice of the Final EIS and issuance of a Record of Decision.

In accordance with 36 CFR 218.9: The legal notice of the Myrtle Creek HFRA project Final EIS was published on April 9, 2007 and the period for filing an objection closed 30 days following that notice. The Reviewing Officer provided written responses to the Objectors on June 11, 2007.

The issuance of this Record of Decision meet the timelines specified for projects authorized under the Healthy Forests Restoration Act, thus my decision may be implemented immediately.

Reviewed and Authorized by:

_____ Forest Supervisor _____

Ranotta K. McNair Date

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Reviewed and Authorized by:

Ranotta K. McNair Forest Supervisor 8/22/2007

Ranotta K. McNair Date

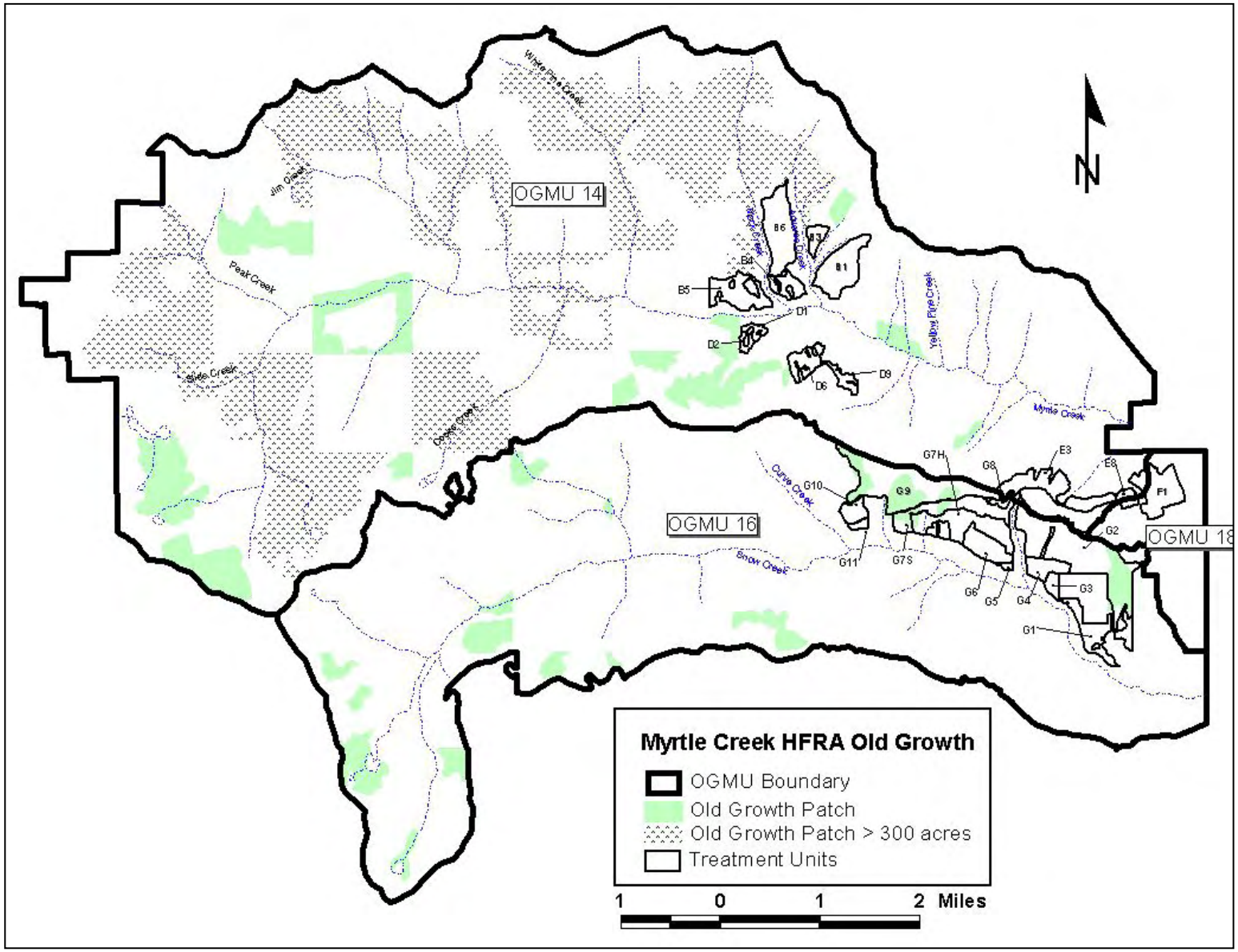

Figure 21. Old Growth Within the Project Area

Table 4. Myrtle Creek HFRA Project Participants and Interested Parties

Name, Affiliation	Working Group	Mailing List Only	Media	Name, Affiliation	Working Group	Mailing List Only	Media
Adrienne Borgias, Kootenai Tribe of Idaho	x			Cleve Shearer, Local resident of Bonners Ferry	x		
B. Sachau, Comment from New Jersey – received in response to Federal Register publication of Notice of Intent				Dan Dinning, Boundary County Commissioner	x		
Bob Bosworth, Representing Boundary County Commissioners	x			Darrell Kerby, Mayor of Bonners Ferry	x		
Bob Blanford, Riley Creek Lumber Co., Mill in Boundary County	x			Dave DelSordo, Sandpoint RD, Forester (Fuels)	x		
Bob Graham, Natural Resource Advisor / Disaster Services for Boundary County	x			Dave Siebenthaler, North Idaho Audubon Society		x	
Bob Hasmiller, US Forest Service	x			David Vig, Northwest Access Alliance, Athol, ID		x	
Bonners Ferry Chamber of Commerce, Bonners Ferry, ID		x		Dianna Ellis, Kootenai National Wildlife Refuge, Manager. Bonners Ferry, ID	x		
Boundary County Library, Bonners Ferry, ID		x		Don Nystrom, Boundary County Soil Conservation District	x		
Boundary County Weed Control, Bonners Ferry, ID		x		Donald Marsh, Boundary County Citizen		x	
Brett Lyndaker, BFRD, Wildlife Biologist	x			Dave Wattenbarger, Boundary County Soil Conservation District.	x		
Brian Triplett, Bonners Ferry Herald			x	Doug Nishek, USFS, Project Leader BFRD	x		
Byron Holt, US Fish and Wildlife Service, Spokane, WA office	x			Ed Tulloch, Idaho Dept of Environmental Quality, Regional Water Quality Manager Steven Tanner, Idaho Dept of Environmental Quality, Drinking Water Program Supervisor		x	
Carmen Young, US Forest Service	x			Ellen Picken, The Lands Council, Spokane, WA	x		
Chris Lund, Idaho Department of Lands, Bonners Ferry, ID	x			Eric Sieracki, resident of Priest Lake, ID	x		
Christine Reichgott, Environmental Protection Agency, NEPA Review Unit		x		Forest Capital Partners, industrial (timber) landowners in Myrtle Creek drainage.	x		
Christopher Picken, The Lands Council, Spokane, WA	x			Gail West, Public Affairs Officer IPNF	x		
Chuck Lycans, City of Bonners Ferry, Water Treatment/Delivery Facilities	x			Gary Aitken, Sr., Kootenai Tribal Chairman	X		
Gina Rone, USFS Soils Scientist	x			Joe Madison, Fisheries Biologist, Sandpoint Ranger District	x		

Name, Affiliation	Working Group	Mailing List Only	Media	Name, Affiliation	Working Group	Mailing List Only	Media
Greg Johnson, Idaho Fish and Game, local Conservation Officer – Bonners Ferry, ID		x		John Martin, North Idaho Aid to US Senator Larry Craig	x		
Greg Tourtlotte, Idaho Fish and Game, Regional Supervisor, Coeur d'Alene, ID		x		John O'Connor, Idaho Conservation League, Bonners Ferry member. Also member of KVRI Board - representing Conservation interests.	x		
Heather (Maureen) Palmer, BFRD Hydrology Technician	x			Jonathan Oppenhiemer, Idaho Conservation League, Boise, ID		x	
Idaho Dept of Lands, Bonners Ferry, ID	x			Josie Shottanana, Kootenai Tribe of Idaho	x		
Idaho Native Plant Society, Sandpoint, ID		x		June Bergquist, Idaho Dept of Environmental Quality, Surface Water		x	
Ina Pluid, Idaho Women in Timber, Local Chapter		x		Justin Petty, The Nature Conservancy	x		
Ingrid Pavia, Idaho Conservation League	x			Kennon McClintock, Forest Capital Partners	x		
Janet Hanson, Rural Northwest News			x	Kevin Greenleaf, Kootenai Tribe of Idaho	x		
Jeff Cook, Idaho Dept of Parks and Recreation, Outdoor Recreation Analyst, Boise, ID		x		Kim Davitt, American Wildlands, Bozeman, MT		x	
Jeff Juel, WildWest Institute, Missoula, MT		x		Kim Golden, Priest Lake Rural Conservation and Development / USDA Natural Resources Conservation Service	x		
Jennifer Borg, USFS, Fire/Fuels Specialist Bonners Ferry Ranger District	x			Kirk Westfall, Fire Management Officer, Bonners Ferry Ranger District	x		
Emma Suarez, Pacific Legal Foundation, Sacramento, CA 95843		x		Kootenai Tribe of Idaho, Tribal Chairman, Bonners Ferry, ID	X		
Jennifer Hickenbottom, USFS, Hydrologist, Bonners Ferry Ranger District	x			Kurt Pavlatt, Bureau of Land Management, Coeur d'Alene, ID. BLM owns land in lower portion of Myrtle Creek drainage.	x		
Jennifer Porter, Kootenai Tribe, Council Chairperson	x			US Senator Larry Craig, North Idaho Office, Coeur d'Alene, ID		x	
Jerry Garten, Idaho Department of Lands	x			Eric Thomson, BLM, CdA Office	x		
Jerry Pavia, Boundary Backpackers – Idaho Conservation League	x			Linda Langness, Idaho Conservation League		x	
Jim Cadnum, Forest Capital Partners	x			Liz Sedler, Selkirk Conservation Alliance & Alliance for the Wild Rockies (Sandpoint, ID)	x		
Jim Hagengruber, Spokesman Review (Spokane, WA newspaper)			x	Maridel Merritt, USFS, Writer-Editor/NEPA Coordinator	x		
Mark Compton, U.S. Representative Otter's office	x			Rob Steinhorst, Bonners Ferry Ranger District, Operations and Engineering through Sept 2005	x		
Mark Sprengel, Selkirk Conservation Alliance	x			Robert Hanover, Boundary County Citizen		x	

Name, Affiliation	Working Group	Mailing List Only	Media	Name, Affiliation	Working Group	Mailing List Only	Media
Mary Kay Lutes, Boundary County Citizen		x		Robin Ponsness, Boundary Economic Development Committee, Bonners Ferry, ID	x		
Matt Butler, Priest Lake Ranger District, Fire/Fuels Specialist	x			Ron Gray, AVISTA Corp. Natural gas and electricity utility company.		x	
Michael Garrity, Alliance for the Wild Rockies, regional office		x		Ron Mitchell, Idaho Sporting Congress, Boise, ID		x	
Michael Gondek, USDA Natural Resources Conservation Service	x			Russ Docherty, Bonners Ferry City Councilman	x		
Michael Richardson, Idaho Conservation League local member	x			Sarah Bigger, Associate Director, ESPRI (Environmental Science and Public Policy Research Institute at Boise State University)	x		
Mick Mellett, City of Bonners Ferry - Council	x			Scott Bacon, Idaho Dept. of Lands, Bonners Ferry	x		
Mike Brown, Blue Sky Broadcasting			x	Scott Soults, Fisheries Biologist, Kootenai Tribe of Idaho	x		
Mike Herrin, District Ranger, Bonners Ferry Ranger District through January, 2007-	x			Shanna Smith, USFS, Forester Bonners Ferry Ranger District	x		
Mike Mihelich, Kootenai Environmental Alliance, Coeur d'Alene, ID		x		Shawn Keough, Idaho State Legislator		x	
Mike Petersen, The Lands Council, Spokane, WA	x			Stefany Bales, Aid to US Senator Mike Crapo	x		
Mike Weland, Kootenai Valley Press, Bonners Ferry, ID			x	Steven Boorman, City of Bonners Ferry, City Administrator	x		
Nathan (unknown), Idaho Conservation League member	x			Sue Ireland, Kootenai Tribe of Idaho	x		
Noel Williams, Eureka, MT resident		x		Susan Drumheller, Idaho Conservation League, member from Sandpoint, ID	x		
Pat Behrens, USFS, Ecosystem Staff Officer, Bonners Ferry Ranger District	x			Susan Martin, US Fish & Wildlife Service, Spokane, WA		x	
Paul Sieracki, Selkirk Conservation Alliance	x			Suzanne Audett, US Fish & Wildlife Service, Spokane, WA		x	
Patty Perry, Kootenai Tribe of Idaho	x			Theogene Mbabaliye, EPA, NEPA Review		x	
Preston Sleeger, US Dept of Interior, Regional Environmental Office, NEPA Review		x		Warren Seyler, Chair, Upper Columbia United Tribes		x	
Rein Attemann, The Lands Council, Spokane, WA	x			Wayne Wakkinen, Idaho Dept of Fish and Game		x	
Tania Ellersick, The Lands Council, Spokane, WA	x			Yvonne Pettit, Idaho Dept of Environmental Quality, Drinking Water Protection Specialist	x		

Glossary of Terms

Fire Hazard – is the availability of fuels to sustain a fire and is calculated by using modeling results in fire behavior predictions. Where high fire risk and high fire hazard coincide, the likelihood of fire with unwanted effects is much more likely.

Fire Intensity – The rate of heat release per unit time per unit length of fireline. For example BTUs/foot/second.

Fire Regime – A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. Described by five categories, identified as I through V.

Fire Regime Condition Class – Characterizes the degree of departure from natural fire regimes, determined from changes in vegetative attributes brought on by changes in disturbance patterns such as fire frequency and severity.

Fire Risk – The likelihood of an ignition occurring, as determined from historical fire records.

Fire Severity – The degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity (see above definition) and the length of time the fire was burning in the specified location (residence time).

Fuel Model – A system of mathematical equations that describe physical properties of fuels, including fuel loading (the amount of fuel in a given area), fuel bed depth, and moisture of extinction (the fuel moisture content, weighed over all the fuel classes, at which the fire will not spread). These properties are determined based on the vegetative layer that would serve as the primary carrier of a surface fire. The Fire Behavior Fuel Models are used in fire behavior prediction modeling for their physical description of fuels and to estimate potential fire behavior. They are for fire behavior estimation during the "severe period of the fire season when wildfires pose greater control problems and impact on land resources."

Fuel Model 8: Typically characterized by a timber overstory with light timber litter (needles, leaves, occasional twigs (FEIS, pg. 3-36)). Slow-burning ground fires with low flame lengths are typical, although the fire may encounter occasional heavy fuels. Only under severe weather conditions, with high temperatures, low humidities, and high winds do the fuels pose a hazard. (FEIS, pg. 3-35)

Fuel Model 10: Heavy timber litter, material is greater than three inches in diameter (FEIS, pg. 3-36). Surface fires in FM10 generally burn with more intensity than the other timber litter models. Flame lengths greater than four feet can be expected and may be greater in length depending on the influence of slope, wind, and other environmental factors that contribute to high fire danger, such as high temperatures and low relative humidity. Rates of spread vary depending on these factors, but are generally higher and more sustained due to the greater presence of heavy timber litter. This not only makes suppression by direct attack with hand crews difficult, but provides an easier route for the fire to reach the ladder fuels and move into the tree crowns. It also makes even aerial suppression resources ineffective for direct attack. Within the project area, the majority of the stands with no record of past management (outside the area of the 2003 Myrtle Creek Fire) can be classified as Fuel Model 10 (heavy timber litter). (FEIS, pg. 3-36)

Total Maximum Daily Loads (TMDLs) – Simply put, TMDL is a pollutant budget – a calculation of the maximum amount of a pollutant that a water body can receive from human-caused sources and

continue to meet water quality standards. "TMDL" also refers to the written, quantitative assessment of water quality concerns and contributing pollutant sources for a body of water. (FEIS, pgs. D-1, D-2)

Variable Density Mosaic – A system of fuels treatments designed to use clumps, stringers, and openings to develop a forest mosaic with variability that will be less susceptible to sever fire.

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