United States
Department of
Agriculture

Forest Service

Northern Region

Idaho Panhandle
National Forests

August 2003

Coeur d'Alene River Ranger District
Deerfoot Resource Area

Decision Notice

Table of Contents

DEERFOOT RESOURCE AREA
Decision Notice
Coeur d'Alene River Ranger District

1. Introduction

The 13,850-acre Deerfoot Resource Area is located in Kootenai County, Idaho (Figures 1 and 2). Popular with local recreationists, it is close to several communities, including Hayden, Dalton Gardens and Coeur d'Alene, which have a combined population of approximately 45,680. The western edge of the area is visible from Hayden Lake and private lands along the lake.

There are six watersheds in the area: Stump Creek, Nilsen Creek, Mokins Creek, Jim Creek, Yellowbanks Creek and the Hayden Face Tributary. All of the streams flow through private land in their lower reaches before feeding into Hayden Lake. Forest vegetation is dominated by grand fir and Douglas-fir. About 5% of the timber is small (seedling, sapling or shrub), about half is small to medium-sized, and the remainder is mature and large timber. The Resource Area does not include any designated wilderness or roadless areas.

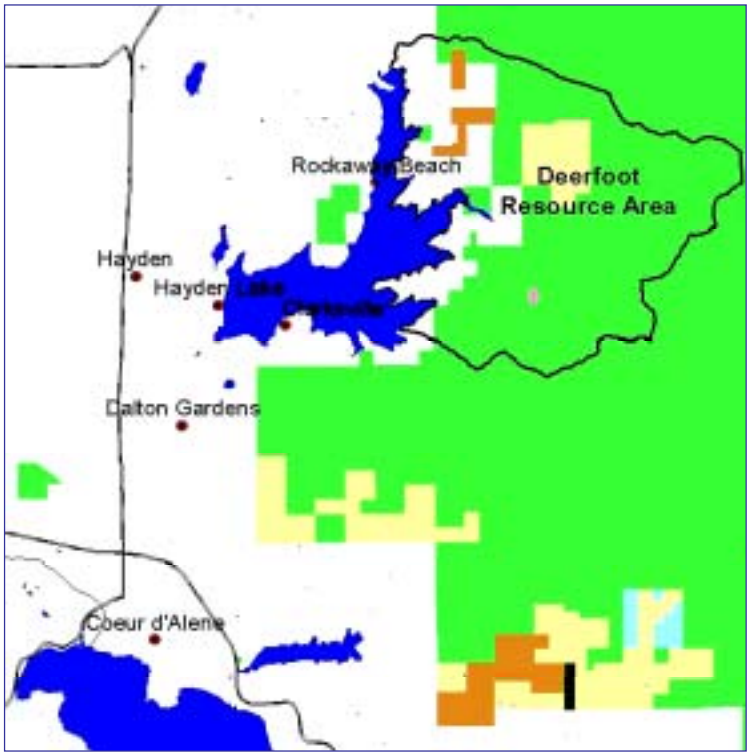

Figure 1. Vicinity Map of the Deerfoot Resource Area.

2. Purpose And Need For Action

Many of the dry-site ponderosa pine forests such as those found in the Deerfoot Resource Area are currently in a condition that could be subjected to larger, more intense fires than occurred historically. This is a result of changes in forest structure and composition, which, in turn, were primarily a result of fire suppression and historic logging. A large wildfire in the Deerfoot Resource Area would threaten homes, private land, and the Hayden viewshed; reduce air quality; and endanger public safety. Economic impacts of a large wildfire could be significant, since the tourism industry in the affected area would likely be slowed substantially.

OBJECTIVE A.
Reduce the overall risk of high-intensity, stand-replacing fires in stands that were historically re. At the same time, reduce the size and intensity of potential wildfires near the urban reas that rarely experienced high-intensity crown fires historically.

OBJECTIVE B.
Restore historical conditions in ed on the fire ecology of these forest types.

Historically, large, well-spaced ponderosa pine trees characterized many of the stands in the Deerfoot Resource Area. The undergrowth consisted primarily of brush, forbs and grass. Brush in these stands was relatively short (2-5 feet or less) and was much less abundant than today. The branches of large trees were pruned by fire, and regeneration of Douglas-fir and grand fir was substantially restricted due to the frequency of fires. Present-day stands are characterized by thickets of sapling and pole-sized fir, dense Douglas-fir with incidence of root disease, and scattered ponderosa pine. The presence of more Douglas-fir and grand-fir (species less tolerant of insects, disease and fire), and the increased fuel loading due to fire suppression has put these stands at greater risk for large, high-intensity crown fires.

OBJECTIVE C.
...e species composition toward ponderosa pine, ...white pine, ...ant to insects and diseases.

Throughout the Coeur d'Alene River Basin, ponderosa pine, larch and white pine have declined compared to historical conditions (EA, p. 1-5). Ponderosa pine stands now have a larger component of Douglas-fir and grand fir in both the overstory and in the understory. Douglas-fir and grand fir are both often infected with diseases (such as root rot and mistletoe) or insects. Species such as ponderosa pine and western larch are often the most resistant to insects, disease and disturbance such as fire.

3. The Selected Alternative

I have decided to implement **Alternative 4** as described in the Environmental Assessment (EA). (Please refer to the enclosed map.) Alternative 4 represents the Proposed Action, as described in the EA, Chapter 2. My decision is based on:

- *the extent to which each alternative addresses the purpose and need for action*
- *how well each alternative responds to environmental issues and concerns identified by the public, other agencies, and Forest Service resource specialists*
- *consistency with the goals and findings of Forest policy and legal mandates*
- *effects of the selected alternative in comparison to other alternatives considered*

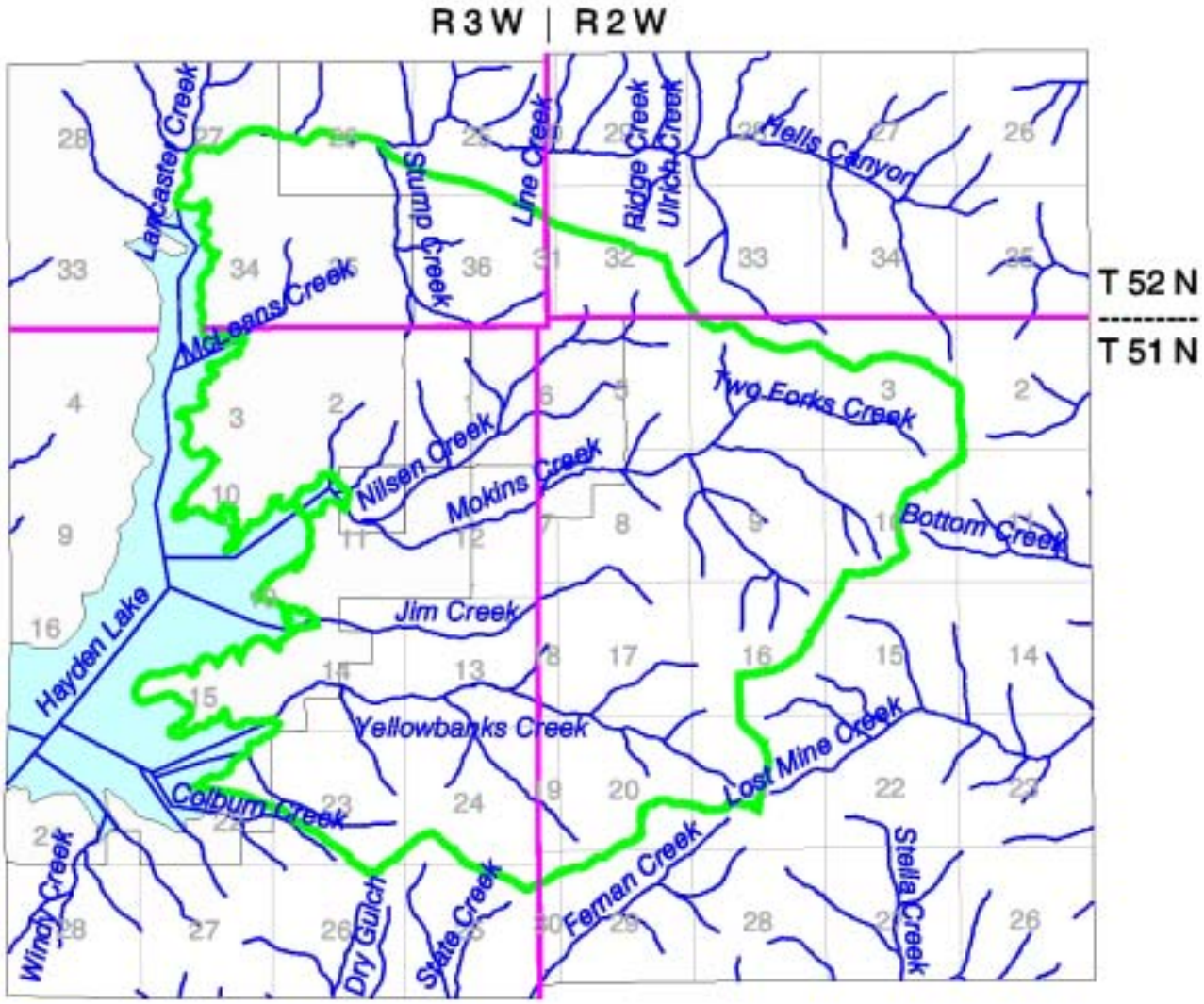

Figure 2. Approximate boundary of the Deerfoot Resource Area.

The following activities WILL OCCUR as part of the decision to implement the Selected Alternative.

Analyses of effects under Alternative 4 were based on implementation of the activities identified below (EA, pp. 2-10, 2-11; by resource in Chapter 3). Specific features of the alternatives were designed to protect natural resources while implementing these activities; those features are identified in Section 4 (A) by resource discussion.

- **Commercial thinning will occur on 641 acres** in those stands that have a component of fire-resistant, species such as ponderosa pine and western larch (please see Table 1). This treatment will enhance resiliency in the stand, since the increased growth and vitality of the remaining trees will contribute to the component of large ponderosa pine and western larch species.

- **Shelterwood harvests (followed by underburning) will occur on 750 acres** in stands dominated by grand fir and Douglas-fir that are showing signs of root disease and stem decay (please see Table 1). Ponderosa pine and western larch of all sizes will be favored to remain on site; those 18 inches or greater in diameter would receive special emphasis to remain on site. To expand the current range of the species, planting will occur throughout stands and in areas adjacent to existing ponderosa pine stands.

- **A combination of slashing fuels, underburning, and rehabilitation will occur on 269 acres** in stands that previously had thinning or salvage harvests (please see Table 2). This combination treatment is appropriate because of the variability in the amount and arrangement of stocking on these sites. Currently about half of the treatment areas have 10 to 50 trees per acre, while the remainder has from 50 to 200 trees per acre. In all of the treatment areas, arrangement of trees is highly variable. Residual overstory will be patchy, ranging from single trees to patches of 3 to 5 acres or more in size. Many residual conifers that are not meeting overall target stand objectives and tall brush will be slashed. Prescribed fire will be used to remove the slash throughout the area, and to reduce shrub competition for planted seedlings. Regeneration will be established on approximately 40 to 50% of the area. In areas to be planted, overstory trees will be retained over the long term to serve as shelter, which is needed on these harsher sites to assure regeneration success. Reforestation will focus on site-adapted ponderosa pine, western larch and white pine.

Table 1. Specific Unit Information for Harvest Units under the Selected Alternative. ***(Underburning will occur in all units as fuels treatment. Acres have been rounded to the nearest whole number.)***

Unit	Acres	Harvest Treatment	Yarding
2a	75	shelterwood	cable
2b	31	shelterwood	helicopter
2c	66	shelterwood	helicopter
3a	69	thinning	helicopter
3b	34	thinning	cable
3c	6	thinning	tractor
5a	61	shelterwood	helicopter
5b	43	shelterwood	cable
5c	27	shelterwood	tractor
5d	3	shelterwood	cable
8a	92	thinning	cable
8b	2	thinning	tractor
8c	1	thinning	tractor
9a	58	shelterwood	cable
9b	2	shelterwood	tractor
9c	2	shelterwood	helicopter
10a	45	thinning	cable
10b	10	thinning	helicopter
10c	6	thinning	cable
11	16	thinning	cable
15a	14	shelterwood	cable
15b	3	shelterwood	helicopter
17a	33	thinning	cable
17b	13	thinning	Helicopter

Unit	Acres	Harvest Treatment	Yarding
18	56	shelterwood	helicopter
19	31	thinning	helicopter
21a	106	thinning	cable
21b	8	thinning	tractor
21c	6	thinning	tractor
22a	45	shelterwood	helicopter
22b	11	shelterwood	cable
22c	5	shelterwood	tractor
22d	7	shelterwood	tractor
22e	7	Shelterwood	Helicopter
23a	13	Thinning	Helicopter
23b	12	Thinning	cable
24a	61	Thinning	helicopter
24b	5	Thinning	cable
25a	58	Thinning	cable
25b	15	Thinning	Helicopter
26	59	Shelterwood	helicopter
27	110	Shelterwood	Helicopter
28a	44	Shelterwood	helicopter
28b	16	Shelterwood	cable
28c	2	Shelterwood	Tractor
28d	3	Shelterwood	Helicopter
28e	1	Shelterwood	Helicopter
Total	**1.391**		

Table 2. Specific Unit Information for Combination (Slashing, Underburn & Rehab) Units under the Selected Alternative. ***(Acres have been rounded to the nearest whole number.)***

Unit	Acres
1	11
4a	17
4b	12
6	25
7a	13
7b	6
7c	1
12	11
13a	27
13b	9

Unit	Acres
13c	2
14a	47
14b	29
16a	16
16b	12
20	16
29a	8
29b	4
Total	**266**

For additional discussion related to the existing transportation system and the anticipated changes to roads, please refer to the enclosed Transportation System map, the EA (Appendix H) and the Project Files (Transportation).

- **A total of 1.15 miles of system road will be constructed to treat a portion of the stands.** First, a 0.73-mile section of road will be constructed off Road 1536 to replace a section of road that is too steep to be used safely (this steep road will be decommissioned and permanently deleted from the district road inventory). Secondly, a 0.42-mile section of road will be built off Road 406 spurs to access a suitable helicopter landing for tree yarding from Unit 2B.
- **A total of approximately 29 miles of reconditioning will occur on existing roads to provide safe access for vehicles and equipment.** Reconditioning (consisting of light blading and brushing) will occur on approximately 14 miles of Road 206, 3 miles of Road 406, 3.3 miles of Road 406B, 5.7 miles of Road 1535, and 2.5 miles of Road 1562A.
- **A total of approximately 17 miles of reconstruction will occur on existing roads to provide safe access for vehicles and equipment.** Existing roads used for timber harvest activity will be improved to meet standards suitable for use by large trucks and equipment. Reconstruction will consist of brushing (removing both trees and brush growing in the roadbed), blading, shaping and replacing culverts (EA, p. H-2). Approximately 4 miles of reconstruction will occur on spurs of Road 406, 1.8 miles on Road 1535 and its spurs, 10.5 miles on Road 1536 and its spurs, and approximately 0.4 miles on Road 1562B. On open roads used for timber harvest activities, drainage structures that pose sediment risks will be repaired, replaced, removed or redesigned as needed. All currently closed roads that are opened to accomplish the vegetative activities will be closed after project activities are complete.
- **A total of 9.3 miles of roads no longer needed for long-term vehicle access and which have the greatest potential for chronic sediment will be decommissioned.** From a watershed restoration standpoint it is highly desirable to greatly reduce and/or render inert (decommission) the number of roads in the area. Doing so reduces the long-term risk of catastrophic failures that can introduce large amounts of sediment into the watersheds (EA, p. H-1). These roads have small drainage crossings that have either under-sized culverts, or crossings with fills that are failing and routing sediment downstream (EA, p. 3-85). Brushed-in road segments that are not causing any erosion or sediment will not be altered. The roads identified for decommissioning under this project are roads that were already closed to general motorized use under earlier decisions or closure orders. Roads to be decommissioned include a 0.4-mile segment of Road 9090, 2.3 miles (3 segments) of Road 206 spurs, 3.8 miles (2 segments) of Road 1535 spurs, and 2.8 miles of Road 1536UM (EA, p. 3-85, Table 3-AQ-5). The desire to maintain public access within and through the area, especially for recreation, was among the factors used in determining which roads would remain open year around, and how other roads would be decommissioned (EA, p. H-1 and H-2). There will be no change in the miles of ATV/motorcycle use on system roads (EA, p. H-5). If a road to be decommissioned is also designated as an ATV trail, a narrow trail will be retained on the road during decommissioning (EA, p. H-2). Access to private parcels within the Deerfoot Resource Area will not be changed (EA, p. H-3).

- **A total of 17 road-stream crossings will be upgraded or have culverts replaced.** These crossings are at risk for failure because they are either undersized or have fill that can easily erode and be transported downstream (EA, p. 3-85). In open roads used for timber haul, drainage structures will be repaired, replaced, removed or redesigned to reduce sediment risk. This may include pulling back fill along the crossing, and stabilizing stream channels (EA, p. 2-17). After vegetation is established at crossing repair sites, there will be a permanent reduction in the risk of sedimentation delivered downstream (EA, p. 3-85).
- **The Stump Creek meadows area will be closed to vehicle access and rehabilitation work will occur.** Vehicles have been driven through the meadows, causing damage (EA, p. 2-17). Several user-created access points need closure with earth barriers, trenches, and boulders to prevent access from Road 206 and an existing gravel pit located beside Road 437. Damaged areas in the meadows will be filled in, reshaped, and seeded. Stump Creek itself will be treated with bank stabilization and an in-stream structure where a user-created ford has impacted habitat. Stream banks will also be reshaped, stabilized, and seeded. By effectively closing off access points into the meadow natural vegetative recovery will occur and conditions immediately adjacent to the damaged areas will recover (EA, p. 2-17).

Figure 3. Damage in Stump Creek Meadows from unauthorized vehicle use.

In addition, the following activities MAY OCCUR as part of the Selected Alternative.

There are opportunities to accomplish the following additional activities in the Deerfoot Resource Area **if** funding becomes available (EA, pp. 2-19, 2-20). It is not mandatory that these activities occur in conjunction with this project, but they may be accomplished as additional monies become available through appropriated funding or grants. The anticipated effects of these activities have been considered, and are disclosed in the EA (pp. 2-19, 2-20; and by resource as applicable in Chapter 3).

Precommercial thinning and white pine pruning: Opportunities for vegetation restoration include precommercial thinning and white pine pruning. The effect of these treatments would be to improve the growth and vigor of planted or naturally regenerated trees in stands that were harvested in the past (EA, p. 2-20). Precommercial thinning is prioritized to treat those stands with a large component of ponderosa pine, western larch, and white pine, allowing these species to better compete with the more shade-tolerant species so they can better provide the desired forest structure and composition. Pruning of white pine reduces the potential of infection by white pine blister rust and also improves the tree's ability to survive infection by removing infected branches. Pruned trees have a better chance of reaching maturity and contributing to the desired forest structure and composition. Opportunities to precommercial thin stands and prune white pine (which does not include merchantable timber harvest) depend on availability of appropriated funding or grants. The following table displays the amount, location and timing of precommercial thinning and pruning opportunities in the Deerfoot Resource Area.

Table 3. Precommercial Thinning and Pruning Planned in the Deerfoot Resource Area Over the Next 10 Years.

Stand #	Acres	Year of Pruning Exam	Year Pruning to Occur	Year of PCT Exam	Year PCT to Occur
30909102	28	2003	2005	2003	2005
30909103	33	2003	2005	2003	2005
30909104	21	2003	2008	2003	2008
30909105	13	2003	2008	2003	2008
30903008	29	2007	2009	NA	2009
30903030	30	2007	2009	2007	2009
31701003	3	2009	2011	NA	NA
31701026	32	NA	NA	2007	2012
30904045	5	NA	NA	2010	2012
30802003	49	NA	NA	2012	NA

Noxious weed surveys and monitoring: The Environmental Protection Agency expressed concern with potential spread of noxious weeds (EA, p. 2-20). Many areas affected by the activities (especially road segments and landings) will be surveyed and monitored to assess the establishment and spread of noxious weeds, new invader species in particular. The full extent of surveying, monitoring and treatment and the availability of funding (KV or appropriated) is not known at this time; therefore, these activities are identified as opportunities that could be accomplished if funding became available. Treatment would be conducted under the guidelines of the Coeur d'Alene River Ranger District Noxious Weed Final Environmental Impact Statement and Record of Decision (USDA Forest Service, 2000). Noxious weed treatments could occur on all roads and trails in the resource area, and treatment could include biological control methods as well as spot treatments for specific areas (EA, p. 2-20).

Removal of additional (already-closed) roads no longer needed as part of the District road system: All roads not identified as part of the long-term transportation plan are available for road removal activities (EA, p. 2-19). The work would consist of the removal of headwater roads and their associated road channel crossings, and the removal of additional low standard roads along streams. The analysis of effects to aquatic resources considered and disclosed the effects of these opportunities. The order in which the work is accomplished depends upon the condition and location of these residual roads. Damaging flood events, such as those experienced in 1996, may dictate future priorities.

Effectiveness monitoring of aquatic conditions: Other opportunities in the Deerfoot Resource Area include effectiveness monitoring at past instream channel and/or culvert replacements and upgrades that have occurred from previous roads work as part of past timber sale-related projects in the analysis area (EA, p. 2-20).

Improve fish habitat conditions in Stump Creek: Recent surveys have identified a stream reach in the lowermost portion of the Stump Creek drainage (Figure 3) that may need in-channel restoration (EA, p. 2-20).

Improve effectiveness of existing closures: Should funding become available, there are opportunities to improve effectiveness of existing closures on roads within the Deerfoot Resource Area where motorized vehicles are prohibited (EA, p. 2-20). Off-road vehicles are being used in the Rocky Mountain Elk Foundation (RMEF) closure area, which may detrimentally affect wildlife security (EA, p. 3-141). Where it is possible to effectively reinforce existing closures and further discourage use of closed roads, barriers will be modified or reconstructed as funding becomes available. These activities will be focused in those areas where wildlife security is a priority.

Figure 4. Lower Stump Creek, where user-created fords have caused streambank damage.

Reduce the number of illegally pioneered trails: Motorized vehicles have also been used to pioneer new trails within the Deerfoot Resource Area, creating travel routes that are not sanctioned nor maintained by the Forest Service (EA, p. 2-20, 3-141). These pioneered trails may threaten wildlife security and increase the spread of noxious weeds throughout the resource area. If funding becomes available, these pioneered trails will be closed using methods such as earth berms and the placement of boulders and logs.

4. The Selected Alternative in Terms of Specific Resources and Concerns

For each resource or concern, the following is briefly described:

A. Specific features of the Selected Alternative: These are incorporated into project design, layout and implementation to protect the resource or address the concern, and were considered in the effects analyses. There are also features related to heritage resources and long-term transportation; all are described in greater detail in the EA, Chapter 2 (pp. 2-12 through 2-19).

B. Specific mitigation measures: These are incorporated into project design, timber sale contract, and other contracts and project plans to reduce effects to resources. These measures will reduce the impact beyond that reflected in the effects analyses. Mitigation measures are described in greater detail in the EA, Chapter 2 (pp. 2-20 through 2-22).

C. Consistency with laws, regulations and policy: This discussion is not all-inclusive, but focuses on the areas raised as issues or comments from the public or other agencies. Further details are provided by resource in the EA, Chapter 3.

D. Comparison: Briefly, the difference between the Selected Alternative and the other alternatives considered in detail is described in terms of effects to each resource. A summary comparison is provided in Chapter 2 of the EA, with detailed information in Chapter 3 (by resource).

4.1 Aquatic Resources

A. Specific Features Designed to Protect Aquatic Resources

(1) Site-specific Best Management Practices are part of the project design criteria, as described in the EA (Appendix A).

(2) Roads that will be closed to maintain big-game security goals and/or sediment and water yield reduction purposes will comply with the Inland Native Fish Strategy (INFS 1995; PF Doc. AQ-4) prior to closure.

(3) Streamside buffers will be applied along all harvest units to meet the riparian management objectives of maintaining slope stability in potentially sensitive areas, maintain stream temperatures and provide a long-term supply of large woody debris.

(4) Commercial timber cutting will be prohibited in Riparian Habitat Conservation Areas (RHCAs) for fish habitat protection using the guidelines established by the INFS (1995; PF Doc. AQ-4). Except for units likely to have burning and reforestation activities within the RHCA, standard widths defining RHCAs will be used without modification. No overstory canopy will be removed within the RHCAs.

(5) Timing guidelines will be used to reduce impacts to fish eggs and fry. Instream work will be avoided prior to July 15 each year because it can cause increased sedimentation (fines) while the work is being conducted.

(6) All known or discovered wetlands, seeps, bogs, elk wallows and springs less than one acre in size will be protected with a "no activity" buffer approximately 100 feet in diameter or as prescribed by the zone botanist. The no-activity buffer is incorporated into project design and unit layout, and implemented by the sale administrator.

(7) To avoid adverse effects to fish and redds while using natural water sources to control prescribed burns, water removal may not exceed 90 gallons per minute and pumping sites will be located away from spawning gravels. The intake hose will be screened to prevent accidental intake of fish eggs, fry or small fish. An emergency spill clean up kit will be on site in the unlikely event of a fuel spill outside the containment system.

(8) Road maintenance activities will focus on reducing sediment delivery by blading along the road prism; spot surfacing at stream crossings; installing relief culverts where ditch lengths are too long; cleaning and improving ditches; cleaning the inlet and outlets of culverts; and installing rolling dips and outlet ditches. Spot gravelling with approximately 6 inches of gravel will be required at all stream crossings, rolling dips, and in any wet areas.

B. Specific Mitigation Measures Designed to Reduce Effects to Aquatic Resources

Based on current information, no new stream crossings are needed under the Selected Alternative. However, if it were discovered during implementation that crossings do need to be installed, they would be engineered to meet 100-year flood events, which would minimize the risk of failure (EA, Appendix A, pp. A-18 and A-20).

C. Consistency with Laws, Regulations and Policy Related to Aquatic Resources

The Selected Alternative is consistent with the Clean Water Act, including Idaho Forest Practices Act requirements. There are no streams within the project area that are water quality limited or listed for any pollutant (EA, p. 3-60). All the streams in the project area (except for Hayden Face Tributary) flow through private land in their lower reaches before entering Hayden Lake. Hayden Lake is water quality limited (303d listed) for both nutrients and sediment. Given the scope and ensuing analysis of the project, we have determined that cumulative effects will not be detected in Hayden Creek or Hayden Lake (EA, p. 3-72). There will be no net increase in nutrients and sediment (the pollutants of concern) into Hayden Lake as a result of project activities, in compliance with the current TMDL status (EA, p. 3-96). Considering reasonably foreseeable activities (EA, pp. 2-5 through 2-7), activities under this project will result in a net increase in sediment yield in the short term, and an overall reduction in sediment risk in the long term (EA, p. 3-92). The risk of any sediment delivery actually reaching a live channel is relatively low. The predicted short-term increase in sediment yield associated with project activities is small compared to the overall long-term reduction in sediment yield and risk of sediment delivery that will occur as a result of culvert upgrades and road decommissioning under this project (EA, pp. 3-86, 3-92). Risks to beneficial uses in the aquatics analysis area will not be changed by this project (EA, p. 3-96). Activities meet requirements of the Idaho Forest Practices Act (EA, p. 3-96) because Best Management Practices/Soil Water Conservation Practices will be applied and all activities are in compliance with the guidelines in the Soil and Water Conservation Handbook. Based on the Aquatic Resources analyses in Chapter 3 (pages 3-78 through 3-96), and measures outlined in the EA to protect soil and water resources (page 2-14 through 2-18), I find the Selected Alternative meets the requirements of the Clean Water Act (33 U.S.C. §1251).

The Selected Alternative is consistent with Endangered Species Act requirements related to fisheries and the National Forest Management Act related to species viability. An evaluation of effects to fisheries was completed as described in the Environmental Assessment (p.3-78). There will be no effect to bull trout (a Threatened species), because bull trout are not known to reside in the Hayden Lake Basin (EA, pp. 3-56, 3-72). Streams within the Stump Creek watershed of the Deerfoot Resource Area have been surveyed for bull trout twice in recent years; no bull trout were found and none have ever been documented in that area (EA, p. 3-72). Sensitive fish species include westslope cutthroat trout and torrent sculpin (EA, pp. 3-72 and 3-73). Westslope cutthroat trout (also used as the Management Indicator Fish Species for this analysis; EA p. 3-72) have been identified in nearly all streams in the Deerfoot Resource Area (EA, pp. 3-73 through 3-78). Torrent sculpin are not known to inhabit drainages of the Hayden Lake Basin, and it is unlikely that it exists here since it ecologically favors larger stream and river habitats than are found in the Resource Area (EA, p. 3-73). Annual surveys of a subset of streams on the IPNF were conducted in cooperation with Idaho Fish & Game. Based on current information, bull trout and westslope cutthroat trout populations appear to be stable throughout most of north Idaho (2002 Forest Plan Monitoring Report, p. 3; PF Doc. DN-3). Potential short-term increases in sediment may affect individual westslope cutthroat trout and torrent sculpin, but will not lead toward a trend in federal listing (EA, pP. 3-86, 3-92). Over the long-term, the reduction in sediment yield is expected to benefit survival of individuals (EA, p. 3-92). Based on the distribution of species across the Forest, the lack of connectivity between large watersheds, and the limited cumulative effects area (EA, p. 3-72), I find that implementation of the Selected Alternative will not affect viability of any TES or MIS fish species on the Idaho Panhandle National Forests (EA, p. 3-96).

The Selected Alternative is consistent with the Recreational Fishing Act. Project activities may have a short-term impact to fisheries as a result of short-term sediment increases (based on the effects to westslope cutthroat

trout, the Management Indicator Species for this project area), but are expected to have a long-term benefit due to the eventual reduction in sediment yield (EA, p. 3-92). Based on the analysis and documentation provided in the Environmental Assessment, I find that implementation of this project meets the requirements of the Recreational Fishing Act (EA, p. 3-96).

The Selected Alternative is consistent with the Forest Plan standards for Water Resources and Fisheries. There will be little impact to water resources due to project layout, methods and design (EA, pp. 3-92 through 3-95). The Selected Alternative is consistent with the standards and guidelines provided by the Inland Native Fish Strategy (EA, p. 3-92 and Appendix B). Specified riparian management goals and objectives have been developed, and Riparian Habitat Conservation Areas (RHCA) are defined and delineated. Riparian management and Riparian Management Objectives (RMO) are addressed using site-specific analysis and supportive data, and watershed analyses.

D. Comparison of Effects to Aquatics Under Other Alternatives

In terms of aquatic resources, Alternative 4 will have more sediment delivery (tons per square mile) than Alternatives 1 or 2 (which have no commercial timber harvest), and similar effects to Alternative 6 (EA, pp. 3-89 and 3-90). However, predicted sediment increases under Alternative 4 indicate only a slight potential that there would be a *measurable* increase in sediment or delay of recovery in each watershed (EA, p. 3-79). Overall sediment delivery (the difference between estimated sediment delivery from project activities minus the reduction in sediment delivery as a result of watershed improvement activities) under Alternative 4 would be the same as Alternative 6 and more than Alternative 2, but still less than under Alternative 1 (No Action). Effects to channel morphology and aquatic habitat based on overall changes in water yield, sediment yield and peak flows indicate that Alternative 4 will result in potential change in channel morphology and habitat in fish bearing streams, but again with no chance of measurable changes.

4.2 Vegetation Management (including Rare Plants and Noxious Weeds)

A. Features Related to Vegetation Management

(1) Fire-resistant species such as ponderosa pine and western larch will be the highest priority for protection. Removal of these species will only occur when retaining them conflicts with the goals of the project. For example, smaller ponderosa pine and larch will be removed when they create ladder fuels that may endanger a larger, older tree of ponderosa pine or larch during the implementation of a prescribed fire. In addition, selected ponderosa pine or western larch could be removed when they occur in a very dense stand that cannot be safely underburned without thinning. Based on ground reconnaissance already conducted, this should seldom occur in this area.

(2) No harvest, fuels treatment, or other activities will occur in allocated old growth stands.

(3) During layout of the shelterwood units, all harvest units will be located on sites verified to be capable of timber production. Prescriptions will be completed and approved by a certified silviculturist prior to implementation (Forest Plan, Appendix A, p. A-2), providing detailed guidance for vegetative management specific to each unit. Prescriptions will consider site-specific factors such as physical, site, soils, climate, habitat type, current and future vegetative composition and conditions as well as interdisciplinary objectives, NEPA decisions, other regulatory guidance, and Forest Plan goals, objectives and standards.

(4) All regeneration areas will be regenerated with site-adapted species/seed source and resulting stands will be dominated by appropriate species (ponderosa pine, western larch, and white pine). In treated areas, site preparation for regeneration, fuel treatment and planting will occur within 5 years of regeneration treatment. Site preparation and/or fuel treatment may include a combination of slashing, pruning, prescribed burning, grapple piling or hand piling, depending on post-harvest conditions that meet both site preparation and hazard reduction objectives.

(5) In approximately 10-30 years, the stands proposed for regeneration may be entered for pre-commercial thinning, pruning, cleaning, prescribed burning and possibly fertilization to meet target stand and management area guidelines (accomplishment of these activities would require additional public

involvement, analysis and documentation under NEPA guidelines). The long-term transportation plan provides that access for stand-tending purposes will be maintained to all regeneration units.

(6) To reduce the spread of noxious weeds, all roads used for implementation of harvest and burning activities will be treated for noxious weeds prior to and after use. Measures to protect rare plant populations and habitat capability will be implemented during noxious weed treatment, following guidance under the Noxious Weed Final Environmental Impact Statement (EA, p. 2-14, and Appendix I, pp. I-1, I-2). To help prevent the spread of noxious weeds and prevent the introduction of new invader species, contract clauses regarding equipment washing will be included in all construction and timber sale contracts.

B. Specific Mitigation Measures Designed to Reduce Effects to Vegetation

Prior to project implementation, a botanist must survey all previously unsurveyed areas identified as potential or highly suitable habitat that, as a result of the proposed activity, would have a high risk of adverse effects to Threatened and Sensitive plants or habitat, and a likely reduction in population viability. Some areas previously surveyed may be resurveyed, based on the date and intensity of the most recent sensitive plant survey and the risk to sensitive habitat from proposed activities. Should rare plants be located during surveys, one or more of the following protective measures would be implemented:

- *Drop proposed units from activity.*
- *Modify the proposed unit or activity.*
- *Implement a minimum of 100 feet slope distance buffers around sensitive plant occurrences as necessary to minimize effects and maintain population viability.*
- *Implement, if necessary, Timber Sale Contract provisions C(T)6.251#, Protection of Endangered Species, and C(T)9.52, Settlement for Environmental Cancellation.*

The requirement to survey, identify and protect populations from adverse effects and to buffer habitat for threatened species from all activities will be implemented prior to the award of the contract. The maintenance of any buffers protecting populations will be administered in the contract.

These measures are considered by the District botanist to be highly effective (EA, p. 2-21).

C. Consistency with Laws, Regulations and Policy Related to Vegetation

The Selected Alternative is consistent with NFMA requirements and Forest Plan standards for vegetation management. As described in the EA (p. 3-31), implementation of activities under the Selected Alternative is consistent with NFMA requirements and Forest Plan standards related to vegetation management. Under the Selected Alternative, treatments (such as larch thinning and improvement harvests) are designed to maintain existing western white pine, larch and ponderosa pine ecosystem attributes. Following site preparation, regenerated stands will be planted with ponderosa pine, western larch, and white pine to promote stand structures and species composition that reduce susceptibility to insect and disease damage. All stands identified for regeneration harvests are on lands suitable for timber production and can be adequately restocked within 5 years of the final harvest (EA, p. 3-24; IPNF Monitoring, 1998, page 7). In accordance with Forest Plan direction, 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. There are no stands in which clearcutting was considered the optimal silvicultural treatment for the stand; no clearcutting will occur under the Selected Alternative (EA, page 3-24).

The Forest Plan states "openings created by even-aged silviculture will be shaped and blended to forms of the natural terrain to the extent practicable; in most situations they will be limited to 40 acres. Creation of larger openings must conform with current Regional guidelines" (Forest Plan II-32). The public was informed in April 2003 that regeneration openings in excess of 40 acres were proposed under some alternatives (EA, p. 3-30; PF Doc. PI-56). A letter requesting approval to exceed the 40-acre opening size was sent to the Regional Forester on July 3, 2003, and approval has been received (PF Doc. VEG-26).

The analysis considered the effects on residual trees and adjacent stands (Chapter 3 of the EA, Forest Vegetation discussions, pages 3-1 through 3-25). These effects were considered in my decision. I find the treatments that

will occur under the Selected Alternative are designed to protect reserve trees and adjacent stands, including riparian areas, to the extent possible.

The Selected Alternative is consistent with all applicable Forest Plan standards for old growth management (EA, pp. 3-27 through 3-29). Allocation of old growth is based on current and widely accepted science, and follows definitions from the Forest Plan, the Regional Task Force Report, and Forest Supervisor letters of direction for implementing Forest Plan old growth standards (EA, p. 3-27). The requirement that at least 10% of the forested portion of the IPNF is maintained as old growth has been exceeded, with 12% allocated to old growth management in 2001 (EA, p. 3-27; 2002 Forest Plan Monitoring Report, pp. 3 and 68, PF Doc. DN-3). The Coeur d'Alene River Ranger District has also exceeded its standard of managing 56,000 acres as old growth. The District had a total of 60,120 acres in 2001; reviews during 2001-02 resulted in an increase of over 5,000 acres (EA, p. 3-27). Harvest will not occur in any allocated old growth under the Selected Alternative (EA, p. 3-29).

The Selected Alternative is consistent with Endangered Species Act (ESA) requirements and Forest Plan standards related to rare plants. The Coeur d'Alene River District Botanist evaluated the Selected Alternative (Alternative 4) in regard to rare plant species. Based on the requirement for surveys and implementation of mitigation measures to protect rare plants, activities in the Deerfoot Resource Area are consistent with Forest Plan requirements (EA, p. G-16). There will be no effect to water howellia (*Howellia aquatilis*) or Ute ladies-tresses (*Spiranthes diluvialis*). Implementation of activities may affect but are not likely to adversely affect Spalding's catchfly (*Silene spaldingii*). US Fish and Wildlife Service reviewed our analysis and determination of effects, and concurred with these findings (Project Files, BE/BA).

D. Comparison of Effects to Forest Vegetation Under Other Alternatives

Alternative 4 would provide the same change in tree species composition as Alternative 6, assisting in the trend toward historic levels of ponderosa pine, western larch, and white pine in the basin (EA, p. 3-24). Alternatives 1 and 2 would not increase these species in the Deerfoot Resource Area. Canopy and growth would clearly improve more under Alternatives 4 and 6 than under Alternatives 1 and 2 (EA, p. 3-25). All of the alternatives would meet Forest Plan standards related to old growth (none would harvest in old growth). All alternatives would meet or exceed Forest Plan requirements for snag management (EA, pp. 2-21, 2-22, and 3-27 through 3-29).

4.3 Fire and Fuels Management

A. Specific Features Related to Fire and Fuels Management

The Selected Alternative includes fuels treatment using prescribed fire. As suggested by Idaho Fish & Game, site conditions may dictate the use of other fuel treatment methods prior to implementation of burning in order to prepare for the prescribed fire. In harvest units, assessments of fuel conditions need to be made after harvest is completed. It can then be determined whether the burning can be implemented safely and effectively without fuels treatment, or if additional fuels reduction work is necessary prior to burning in order to meet the objectives of the silvicultural prescription. In harvest units and in units without thinning or shelterwood harvest activities, other fuel treatment methods could include slash piling, leave tree protection, slashing, or pruning (EA, p. 2-12).

B. Specific Mitigation Measures Related to Fire and Fuels Management

Based on the effects analysis for the Selected Alternative (EA, p. 3-41 through 3-43, 3-47 through 3-55), anticipated effects related to fire and fuels management are within acceptable levels; therefore no mitigation measures are necessary.

C. Consistency with Laws, Regulations and Policy Related to Fire and Fuels Management

The Selected Alternative is consistent with the National Fire Plan. The purpose and need for the Deerfoot Resource Area project is in accordance with this comprehensive strategy to manage wildland fire, hazardous fuels and to accomplish ecosystem restoration and rehabilitation (EA, p. 2-1).

The Selected Alternative is consistent with the Forest Plan Regarding Fire and Fuels Management. The Selected Alternative is an important step toward reducing the severity of fire effects, the costs of potential wildfire, and fire-caused changes in values (EA, p. 3-55). Activities will begin to trend stands in the area away from potential fire behavior that could threaten human life and property in the resource area. The created activity fuels will be treated in a manner that is consistent with Forest plan standards. Kootenai County recently completed a wildland/urban interface fire mitigation plan. FireSmart Kootenai County is a program designed to meet the objectives of this plan by reducing fuels around homes and making them more likely to survive a wildfire. Since the Deerfoot Resource Area includes private lands and residences near Hayden Lake, where many FireSmart projects are being implemented, this project will be coordinated with the FireSmart effort and will be consistent with Kootenai County goals for reduction of wildland/urban interface fire hazards (EA, p. 2-4).

D. Comparison of Effects to Fire/Fuels Conditions Under Other Alternatives

Alternatives 4 and 6 would better address the fire/fuels concerns than Alternatives 1 and 2. Alternative 1 would allow the continuation of surface fuel accumulation, and the continued loss of fire-resistant species would lead to forests that could experience more pronounced fire effects and an increased amount of mortality associated with a wildfire (EA, p. 3-44). Fire would continue to be more intense and therefore more dangerous to firefighters, as well as more dangerous for nearby homes and communities.

While the underburning of Alternative 2 would immediately reduce surface fuels, it would not significantly change the potential for the more dangerous crown fires. On average, Alternative 2 would reduce flame lengths from those that would occur under Alternative 1, although the flame lengths would trend higher over time as fuels accumulate (EA, p. 3-45).

4.4 Air Quality

A. Features Designed to Protect Air Quality

(1) The Environmental Protection Agency expressed concern related to possible smoke conditions resulting from prescribed burning. The Idaho Panhandle National Forests is a party to the North Idaho Smoke Management Memorandum of Agreement, which established procedures regulating the amount of smoke produced from prescribed fire. The North Idaho group currently uses the services and procedures of the Montana State Airshed Group. The procedures used by the Montana Group are considered to be the "best available control technology" (BACT) by the Montana Air Quality Bureau for major open burning in Montana. A Missoula-based monitoring unit is responsible for coordinating prescribed burning in North Idaho during the months of April through November. This unit monitors meteorological data, air quality data, and planned prescribed burning and decides daily on whether or not restrictions on burning are necessary the following day. These procedures limit smoke accumulations to legal, acceptable limits. The District strictly complies with these procedures, and has had no air quality violations.

B. Specific Mitigation Measures Designed to Reduce Effects to Air Quality

Based on the design features, the anticipated effects to air quality are within acceptable guidelines. No mitigation measures are necessary.

C. Consistency with Laws, Regulations and Policy Related to Air Quality

The Selected Alternative is consistent with the 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 (Forest Plan, page II-9). This will be done under the Selected Alternative, and burning will be conducted in a manner that will meet air quality requirements (EA, p. 2-12). Over the long-term, prescribed fire may reduce total particulates by reducing the risk of large wildfires that cannot be managed for emissions. 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 (Project Files, Air Quality).

The Selected Alternative is consistent with Forest Plan standards regarding air quality. The Forest Plan requires that applicable Federal, State, and local air quality standards will be met. The monitoring of air pollutants during prescribed burning seasons is used to eliminate burning during times when such activities would result in violations of the State Standards, including unacceptable impacts to non-attainment areas. The North Idaho/Montana Airshed Group monitors smoke management for air quality; the Forest Service voluntarily ceases burning operations to avoid violation of State standards. The Idaho Panhandle National Forests coordinate and schedule burning activities to maintain air quality. Burning plans addressing smoke management are prepared by qualified personnel. The Coeur d'Alene River Ranger District implements burning projects in Airshed #11. The monitoring of air pollutants during prescribed burning periods has not recorded any violations of the State standards to date. Because use of prescribed fire will be based on these smoke management guidelines, current air quality standards will not be exceeded (EA, page A-7). Over the long-term, prescribed fire may reduce total particulates by reducing the risk of large wildfires that cannot be managed for emissions. 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 (Project Files, Air Quality).

D. Comparison of Effects to Air Quality Under Other Alternatives

The Environmental Protection Agency identified concerns related to protection of air quality (Project Files, Doc. PI-23). Because the use of prescribed fire would be based on smoke management guidelines, current air quality standards would not be exceeded under any alternative (EA, Appendix I, p. I-2). Over the long term, fuels reduction activities under the action alternatives may reduce total particulates by reducing the risk of large wildfires that cannot be managed for emissions (EA, Appendix I, p. I-2). Alternative 4 and 6 would result in more fuels reduction than Alternatives 1 and 2, so they would likely provide the best opportunity to reduce the air quality impacts of a large wildfire.

4.5 Soils

A. Features Designed to Protect Soils

(1) Fine organic matter and large woody debris will be retained on the ground in harvest units, which is necessary for sustained nutrient recycling (especially in areas of low potassium). In addition, only log-length yarding will be allowed in harvest alternatives (no whole-tree yarding). On units designated for tractor harvest, planned skid trails will be established at 150-foot spacing to reduce overall soil compaction and displacement. In units where previous tractor work has exceeded Forest Plan guidelines for soil disturbance, existing skid trails that do not meet the 150-foot spacing guideline will be ripped to ameliorate compaction concerns. All tractor harvest and wood removal will be scheduled to occur when the soil profile is dry. Prescribed broadcast burning and underburning will be of low intensity and would occur when the soil's surface horizon has at least 25% moisture content in order to protect the site's surface organic component.

(2) To minimize erosion and ensure compliance with State water quality standards, all proposed road construction and timber harvest activities associated with the Deerfoot Resource Area will be completed using Best Management Practices (EA, p. 2-18; and Appendix A).

(3) In those areas where machine or hand piling of slash is proposed, the foliage and branches will be allowed to over winter on the site, allowing potassium to leach out from the slash material. Management of large coarse woody debris and other organic matter (limbs and tops) will follow the research guidelines in Graham et al (1994). Intermountain Forest Tree Nutrition Cooperative (IFTNC) guidelines will ensure retention of maximum potassium on sites (EA, p. 3-106).

B. Specific Mitigation Measures Designed to Reduce Effects to Soils

Based on the effects analysis for the Selected Alternative 4 (EA, p. 3-104 through 3-106) and the features that will protect soil resources (described above), anticipated effects to soils are within acceptable levels; therefore no mitigation measures are necessary.

C. Consistency with Laws, Regulations and Policy Related to Soils

All activities under the Selected Alternative comply with Forest Plan standards and Regional Soil Quality Standards (FSH 2509.18) related to detrimentally disturbed soils, maintaining or exceeding 85 percent of the area in a productive state (EA, p. 3-106). Site productivity will be maintained through the use of large woody debris, following the guidelines of Graham et al (PF Doc. SOIL-34). Compliance with IFTNC guidelines will ensure the retention of the maximum amount of potassium in activity areas following treatment.

Although the project activities will not exceed standards for detrimentally disturbed soils, there are existing units (totaling 80 acres) that exceed the regional soil standard of 15% (EA, p. 3-105). Existing skid trails will be used in these units, so no increase in impacts will occur. In addition, design features of the Selected Alternative (described in Section A above) will be implemented to begin restoring the soils in those units (EA, p. 2-28). Specifically, existing skid trails that do not meet the 150-foot spacing guidelines will be ripped to ameliorate compaction concerns (EA, p. 2-17).

D. Comparison of Effects to Soils Under Other Alternatives

There would be no direct effects to the soil resource under Alternatives 1 or 2, because there would be no road construction, timber harvest or fuel treatment activities (EA, p. 3-103, 3-104). Indirect effects could include increased organic matter as a result of ongoing tree mortality; which can be beneficial in moist habitat types, but not in dry habitat types. There could also be heightened risk of soil damage with the increased fuel loading. In the event of a severe fire, there would be a loss or organic matter from the soil, a loss of nutrient availability, and reduced water infiltration, which affects soil productivity (EA, p. 3-104). Risk of indirect effects would be higher under Alternative 1 than under Alternative 2, which provides fuels reduction through prescribed burning.

Both Alternatives 4 and 6 would cause direct effects to the soils as a result of timber harvest and roadwork (EA, p. 3-104). There would be minor disturbances in skyline/cable and helicopter-yarded harvest units, and where hand line is constructed around units; Forest monitoring indicates these activities result in minor detrimental effects (EA, p. 3-104). Harvest units that would be tractor yarded, have new roads and/or helicopter yarding would have the highest probability of detrimental effects to soils (EA, p. 3-104). Alternative 6 would have slightly more impact than Alternative 4, since there would be an additional 0.63 mile of temporary road under Alternative 6 (EA, pp. 2-10, 3-104).

Road decommissioning activities would be the same under any action alternative, but would not occur under the No-Action Alternative (1) (EA, pp. 2-10, 3-104, 3-105).

4.6 Wildlife

A. Features Designed to Protect Wildlife Habitat

(1) All snags will remain following project activities unless removal is unavoidable or required for safety reasons. Region one protocol for snag retention would be met or exceeded (USDA Forest Service 2000). Ponderosa pine and western larch of all sizes will be favored to remain on the site, especially large trees of these species (18 inches or greater diameter). These large-diameter conifers will be retained unless removal is unavoidable due to safety reasons or special circumstances.

(2) Two road sections that currently have front-end obliterations will be opened to accomplish project activities. All roads opened, constructed or reconstructed for the project will be closed with a gate or barrier during project activities to protect wildlife security. Where gates are missing or damaged on closed roads to be opened for use by the timber purchaser, the gates will be replaced prior to project activities. All of these roads will be effectively closed as soon as possible following project activities. The front-end obliterations will be replaced within 3 years. If project activities were not completed within 3 years, a partial obliteration or other closure structure would be implemented. At the end of project activities, all partial obliterations and closure structures will be re-instated in as good as or better condition than currently exists. These barriers may not have exactly the same placement or configuration as currently exists, but will be designed to discourage unauthorized motorized use while allowing the remaining project-related activities (such as planting) to be completed. Decommissioned roads that are

reconstructed for this project will be returned to their "intermittent stored service" status following completion of activities. Please refer to the EA, Appendix H (Transportation), for additional information related to transportation planning.

B. Specific Mitigation Measures Designed to Protect Wildlife

If any TES species are observed in the resource area, the District wildlife biologist will determine the project modifications necessary to protect the species and its habitat based on applicable laws, regulations and management recommendations for the species. If nesting by any TES species is found to be occurring in any area scheduled for prescribed fire or silvicultural manipulation, no activities would occur in the area until after July 15, or as recommended by the wildlife biologist to avoid impacts to the species.

If previously unknown nesting goshawks were found, the nesting and post-fledgling habitat would be maintained. Any activities within one-half mile of the nest would occur after August 15 and prior to March 1. The known nesting pair will be located prior to any activities in the Two-Forks foraging area to determine the exact location of the nest in that year since goshawk nesting pairs will use a series of several nests in the same general area and may move between these nests from year to year. If the nest location has changed, any stands being used for nesting post-fledgling habitat will be retained.

If bald eagles are detected using the resource area, management to retain habitat and prevent disturbance will be followed according the Pacific States Bald Eagle Recovery Plan (1982).

Region One protocol for snag retention will be met or exceeded (USDA 2000). Due to the decrease in quality snags over time in the resource area as a result of activities (such as past selective harvest of ponderosa pine, western larch and white pine; past salvage; and past fuelwood harvest), roads will not be opened for personal fuelwood harvest during or following project activities.

Salvaging of fire-scorched trees following burning activities associated with this project could decrease habitat for black-backed woodpeckers. In the event trees are fire scorched during site preparation activities, or as a result of any prescribed burning associated with the alternative management actions considered, all of the fire-scorched trees will be retained.

C. Consistency with Laws, Regulations and Policy Related to Wildlife

The Selected Alternative is Consistent With the Endangered Species Act (ESA) and Forest Plan Requirements Regarding Wildlife. Wildlife species listed under the ESA, sensitive species, management indicator species and species of concern known to occur on the IPNF were screened for their relevancy to the Coeur d'Alene River Basin and to the Deerfoot Resource Area by reviewing sighting records, planning documents, habitat suitability models, and other sources such as historic records and scientific literature (EA, pp. 3-108, 3-109). The Coeur d'Alene River District Wildlife Biologist evaluated the Selected Alternative (Alternative 4) in regard to these wildlife species; findings are summarized in the table below, with further information disclosed in the EA (Chapter 3, Wildlife and Appendix I) and in the Biological Assessment (Project Files, BE/BA). Based on the information and analyses provided, I find that the Selected Alternative is consistent with Forest Plan management direction, goals, objectives, standards and guidelines for the management and protection of these wildlife species and their habitat (EA, p. 3-151 through 3-153).

Table 4. Determination of Effects to Wildlife in the Deerfoot Analysis Area Under the Selected Alternative.

Species"	Determination"	Rationale "	See EA page "
Sensitive Species "			
Bald eagle	May affect, but will not likely adversely affect	Nesting in or near activity areas is unlikely because there are no lakes nearby. Guidelines from the Pacific Bald Eagle Recovery Plan were used in project design and mitigation to reduce effects to eagles.	3-116 and PF, BA p. 9
Gray wolf	May affect, but will not likely adversely affect	Not known to occur in the area. If there were, some disturbance could be experienced as a result of activities. Prescribed fire would benefit wolf prey by improving forage on winter range.	3-116 and PF, BA, p. 7
Canada lynx	No effect	Poor quality lynx habitat due to low elevations, lack of spruce/fir habitats and isolation from preferred habitat by distance and lack of connected, preferred forest types. Area is not within or near a lynx analysis unit or designated lynx travel corridor.	3-116 and PF, BA, p. 10
Grizzly bear	No effect	Not likely to occur on this District; District is not within a designated recovery area. Project would not result in long-term degradation of grizzly bear habitat, nor would any expansion of human settlement occur as a result of the project.	3-116 and PF, BA, p. 12
Woodland caribou	No effect	Although some potential habitat exists in other areas of northern Idaho, the caribou are not known to occur outside the Selkirk Mountains.	3-117 and PF, BA, p. 13
Sensitive Species "			
Northern goshawk	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	There will b a loss of 77 acres of suitable habitat as a result of road construction and reconstruction will increase the potential for disturbance to nesting pairs.	3-121 and PF, BE, p. 5
Flammulated owl & white-headed woodpecker	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	There will be a loss of 111 acres of suitable habitat. Additional habitat will be thinned, but will likely be maintained as suitable habitat after treatment is complete.	PF, BE, p. 9
Black-backed woodpecker	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	Up to 65 acres of suitable nesting habitat could be lost. Habitat quality may be reduced in some treated stands. Stands with underburning and slashing will provide additional habitat.	PF, BE, p. 9
Fisher	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	Late successional habitat with the area will be reduced by 5%. Road construction and reconstruction will increase the potential for incidental trapping and disturbance.	PF, BE, p. 11
Wolverine	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	Project activities could result in disturbance or displacement were the species present. Road construction and reconstruction will temporarily reduce security.	2-28, PF, BE, p. 12
Coeur d'Alene salamander	May impact individuals but ill not likely result in a trend toward federal listing or reduced viability	Roadwork could result in disturbance, mortality and temporary habitat alteration.	2-28 PF, BE, p. 13
Peregrine falcon	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Common loon	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Harlequin duck	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Townsend's big-eared bat	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	2-28, 3-111

Table 4. Determination of Effects to Wildlife in the Deerfoot Analysis Area Under the Selected Alternative, " continued. "

Species"	Determination"	Rationale "	See EA page "
Sensitive Species, continued "			
Boreal toad	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Northern leopard frog	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Northern bog lemming	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Common loon	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Common loon	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-111
Old Growth Management Indicator Species "			
Pileated woodpecker	Consistent with the Forest Plan	5% loss of mature habitat (canopy) is likely to result in decreased habitat quality. Some snags could be lost. No old growth will be treated.	3-148
Pine marten	No effect	No probability of occurrence, based on records of species sightings, presence of suitable habitat, and potential to provide suitable habitat in the watershed in the future.	3-140
Big Game Management Indicator Species "			
Rocky Mountain elk	Consistent with the Forest Plan	There will be a temporary loss of security due to road construction and reconstruction. Habitat potential remains at minimum levels, but within Forest Plan standards.	3-146 thru 148

The US Fish and Wildlife Service has reviewed our analysis and determination of effects to Threatened species, and concurred with our findings (Project Files, BE/BA). Based on these determinations, I find the Selected Alternative is consistent with the Endangered Species Act and the Forest Plan in regard to the management and protection of wildlife habitat and species.

D. Comparison of Effects to Wildlife Under Other Alternatives

Under the No-Action Alternative, there would be a long-term risk to wildlife habitat due to decreased crown closure over the next 50 years. There would also be an increasing risk of habitat loss to stand-replacing fire over time.

Alternative 2 would improve forage and open the understory to benefit some species, but would still retain many risks to stands due to the limited amount of acres that can be treated without prior thinning.

Alternative 4 and 6 are very similar. The main difference is the amount of new road construction (there is slightly more under Alternative 6). The amount of road reconstruction (which could cause the most disturbance and loss of security) is the same under both alternatives. The shelterwood prescription will cause a loss of suitable habitat for some species, for a period of up to 150 years. The reintroduction of fire will improve habitat for some neotropical species, and improve forage for elk.

4.7 Transportation

A. Features Related to Transportation

Transportation planning for the Deerfoot Resource Area was conducted using the Roads Analysis (RAP) Process (EA, p.H-2; PF Doc. TRAN-3). A long-term transportation plan was developed for the Deerfoot Resource area, identifying the current status of existing roads within the area (EA, p. 2-18, 2-19, and H-3; PF Doc. TRAN-1 and TRAN-2). Alternative development was based in part on this transportation plan.

B. Specific Mitigation Measures Related to Transportation

Based on the analysis (EA, Appendix H, Project Files - Transportation), anticipated effects on the transportation system are within acceptable levels; therefore no mitigation measures are necessary.

C. Consistency with Laws, Regulations and Policy Related to Transportation

The Selected Alternative is consistent With the Forest Service Road Management and Transportation System Rule. A Roads Analysis Process (RAP) Report has been completed for the Deerfoot Resource Area, documenting the environmental, social and economic impacts of the proposed road construction, reconstruction, maintenance, and decommissioning activities (PF TRAN-3). For additional information, refer to the EA, Appendix H.

The Selected Alternative is consistent With the Roadless Area Conservation Rule and Forest Plan direction regarding Roadless Areas. There are no lands in or immediately adjacent to the Deerfoot Resource Area identified as inventoried roadless. There will be no change to road access in relation to inventoried roadless areas under the Selected Alternative.

The Selected Alternative is consistent With Forest Plan direction regarding transportation.

The Forest Plan identifies standards related to the amount, location, design, and planning of roads (Forest Plan, pp. II-35 and II-36). Identification of the long-term transportation system in the Deerfoot Resource Area (PF Doc. TRAN-1 and TRAN-2) and completion of the Roads Analysis Process (PF Doc. TRAN-3) and activities under the Selected Alternative are consistent with these standards. Please refer to the EA, Appendix H and Project Files, Transportation.

D. Comparison of Transportation Systems Under Other Alternatives

Alternatives 1 and 2 would not build, reconstruct or recondition any roads in the Deerfoot Resource Area, although road construction would occur in conjunction with the long-term transportation plan for the area (EA, Appendix H, p. H-2). Alternatives 4 and 6 would be very similar, with the same amount of reconstruction (29 miles) and reconditioning (17 miles). The difference between the two alternatives lies in the amount of new road construction. There would be 1.15 miles of new system road under Alternative 4, with 1.72 miles of new system road and 0.63 miles of temporary road constructed under Alternative 6. There are 28 miles of roads in the Deerfoot Resource Area planned for decommissioning, leaving a total of 60 miles of road in the Resource Area (with just over 22 miles of roads open to general motorized traffic) under any alternative. There would be no change in the miles of ATV/motorcycle use on system roads under any alternative (EA, Appendix H, p. H-2).

4.8 Recreation

A. Features Designed to Protect Recreational Uses

The overall effect to recreation as a result of activities under the Selected alternative are to the scenic environment, and can alter patterns of access and recreation use. Harvest activities temporarily disrupt recreation by precluding entry into a particular area. Noise, dust and smoke also have effects on recreation. To ensure protection of existing recreation uses and access in the Deerfoot Resource Area,

(1) Either Forest Road 206 or 437 will be open and free of log hauling and timber sale access by conventional vehicles during the snowmobile season of December 15 through the end of March.

(2) Non-system roads that are temporarily opened to facilitate timber harvest and post-harvest operations will be kept closely monitored during activities and closed by obliteration and earth barriers following completion of activities.

"

B. Specific Mitigation Measures Related to Recreation

Based on the analysis (EA, Appx I, p. I-4), there will be negligible effects on recreation opportunities, settings and facilities in the Deerfoot Resource Area; therefore no mitigation measures are necessary.

C. Consistency with Laws, Regulations and Policy Related to Recreation

The Selected Alternative is consistent With recreation objectives under the Natural Resource Agenda. The timber harvest and fuels treatment activities will likely cause some disturbance or interruptions to recreation visitors, but the disturbances will be of a temporary nature (EA, Appx. I, p. I-4). No developed recreation sites will be directly affected. Indirect effects might include the sounds of helicopters and logging trucks passing a recreation site. Recreation experiences may have to be achieved in another area of the forest setting until activities are complete. Activities will be accomplished using safety standards based on the Forest Service's Health and Safety Code Handbook.

D. Comparison of Effects to Recreation Under Other Alternatives

Existing recreation management would continue under the No-Action Alternative (1). There would be a negligible effect on recreation opportunities, settings and facilities in the Deerfoot Resource Area under any of the action alternatives (EA, Appendix I, p. I-4).

4.9 Scenery

A. Features Related to Scenery

There are no specific alternative design features related to scenery management. There are specific mitigation measures, as described below.

B. Specific Mitigation Measures Related to Scenery

The road needed to access Unit 2 (in section 36) will probably meet the partial retention objective due to the distance from critical viewpoints (EA, p. 2-22). Screening the road prism by leaving more trees could soften the straight-line effect of the road crossing the upper portion of the unit. The canopy is more open near the top of the ridge, and the planned cable logging corridors from the road makes it difficult to leave enough trees in place. Layout of this road will be carefully scrutinized to ensure the location minimizes visibility. If visibility were still a concern, one option would be to construct this as a temporary road, which may not meet the objective in the short term, but over the long term the road would be removed from the landscape and rehabilitated. Another option may be to change the location of the road to the north side of Deerfoot Ridge. If these options were necessary, an interdisciplinary analysis would be conducted prior to the change.

C. Consistency with Laws, Regulations and Policy Related to Scenery (EA, p. 2-14 through 2-17)

The Selected Alternative is consistent with Forest Plan direction and policy related to scenery management. The Selected Alternative may have short-term visual effects associated with tree-crown scorching during underburning. New road construction would also impact visuals. However, implementing the measures identified above will allow the alternative to meet Forest Plan standards for visuals (EA, p. 3-158).

D. Comparison of Effects to Scenery Under Other Alternatives

Of 10 timber sales that were active in 2002 on the Coeur d'Alene River Ranger District, 3 were complete and were found to meet visual quality objectives; 6 had the logging activities complete (with burning yet to occur) and were found to meet visual quality objectives, and 1 was incomplete and had not yet been reviewed (2002 Forest Plan Monitoring Report, pp. 18-19; PF Doc. DN-3).

4.10 Finances

A. Features Related to Finances

There are no specific features related to finances; however, revenues and costs vary by alternative due to the level and method of management activities proposed (EA, p. 3-159).

B. Specific Mitigation Measures Related to Finances

Based on the alternative design features and effects analyses, no mitigation measures are necessary related to finances.

C. Consistency with Laws, Regulations and Policy Related to Finances

The Selected Alternative is consistent with Forest Plan direction regarding Finances. Forest-wide goals, objectives, and standards for finances are not specifically addressed in the Forest Plan (EA, p. 3-167). This issue is addressed indirectly in the discussion of community stability. The Selected Alternative will meet this Forest Plan direction because timber harvest will contribute (to a small extent) to the continuing operation of local mills, directly and indirectly enhancing the local and state economy through employment and tax revenues (EA, page 3-37).

D. Comparison of Effects to Finances Under Other Alternatives

Estimated planning costs for gathering information, conducting analyses and preparing the appropriate documents for this project will cost an estimated $200,000 (EA, p. 3-164). Since there would be no timber harvest to generate funds under Alternative 1, there would be a total cost of $200,000. Under Alternative 2, there are costs related to accomplishing prescribed burning, watershed restoration, road closure and decommissioning, and other watershed restoration activities in addition to the planning costs, for a total expenditure of $640,000. Alternatives 4 and 6 would both generate funds through the commercial sale of harvested timber, which would help offset the costs of planning, sale preparation, harvest and engineering administration, slash disposal and site prep, reforestation, road closures and decommissioning, and watershed restoration work. This would amount to a net cost of $1,725,000 under Alternative 4, and slightly less ($1,709,000) under Alternative 6 (primarily because Alternative 4 would generate more funds from the sale of timber).

4.11. Findings And Consistency With Other Laws, Regulations And Policy

The Deerfoot Environmental Assessment and Decision Notice were prepared following the guidelines of the National Environmental Policy Act. The analysis for the Deerfoot Resource Area project followed the guidelines of NEPA as provided by the Council on Environmental Quality (CEQ). Alternatives were developed based on existing conditions, Forest Plan goals and objectives, and public concerns and recommendations. A total of four alternatives were considered in detail (EA, pages 2-9 through 2-12, "Alternative Descriptions"), including a no-action alternative as required by NEPA and NFMA. During alternative development, an additional eight alternatives were briefly considered but eliminated from further study (EA, page 2-24). During review of the environmental assessment, one additional alternative was considered but eliminated from further study (DN, p. 18). The range of alternatives is appropriate given the scope of the proposal and the purpose and need for action (EA, pages 1-2, 1-7).

The Selected Alternative is consistent with the National Resources Agenda. Activities to be implemented under the Selected Alternative have been designed to be consistent with the goals and tentative direction provided under the Natural Resources Agenda to date.

The Selected Alternative is consistent with the Interior Columbia Basin Ecosystem Management Project. Under the Selected Alternative, treatment activities in the Deerfoot Resource Area will address these three primary risks in a manner consistent with Chapter 8 of the Integrated Scientific Assessment.

The Selected Alternative is consistent with the Northern Region Overview. Findings of the Northern Region Overview assessment conclude that there are multiple areas of concern in the Northwest Zone of the Region, but that "this subregion holds the greatest opportunity for vegetation treatments and restoration with timber sales. From a social and economic standpoint, using timber harvest for ecological restoration would be a benefit to the many communities which still have a strong economic dependency, more so than in other zones in the Region. Aquatic restoration should be focused on specific needs based on the zone aquatic restoration strategy." The timber management (timber harvest) tool best fits with the forest types in northern Idaho and is essential, for example, to achieve the openings needed to restore white pine and larch, and maintain upland grass/shrub

communities. The timber harvest, vegetation restoration, and fuels treatment activities that will occur under the Selected Alternative are consistent with the findings and recommendations of the Northern Region Assessment.

The Selected Alternative is consistent with the Forest Plan goals and objectives. General management direction for the Idaho Panhandle National Forests is found in the Forest Plan, which provides Forest-wide goals and objectives (Forest Plan, Chapter II). The standards and guidelines for the Forest Plan (Forest Plan, Chapter II) apply throughout the Resource Area. I have evaluated features of the Selected Alternative against Forest Plan goals and objectives, as well as the resource standards for consistency with the Forest Plan. All management activities included in the Selected Alternative are in full compliance with and generally exceed Forest Plan goals, objectives and standards, including the Inland Native Fish Strategy amendment to the Forest Plan. For additional discussion of consistency with the Forest Plan, please refer to the discussions under each resource or concern in Section 4 of this Decision Notice.

The Selected Alternative is consistent with the Coeur d'Alene River Basin Geographic Assessment. The Geographic Assessment for the Coeur d'Alene River basin provides a description of the historic and current ecological, social, and economic conditions of the subbasin. The findings of the assessment proved to be consistent with the findings of the Upper Columbia River Basin findings at the next scale down. To identify the overall strategy for the Coeur d'Alene River Basin, the terrestrial, watershed, wildlife and recreation (sense of place) maps were overlaid. The highest priority for active restoration becomes 1) non-functioning watersheds with serious terrestrial problems; and 2) functioning-at-risk watersheds with serious terrestrial problems (Geographic Assessment, pages 62-65). The Geographic Assessment classifies the Deerfoot Resource Area as "Condition 2" landscapes (EA, p. 2-4). Condition 2 landscapes are the highest priority for vegetative restoration. The Geographic Assessment further classifies the Hayden Lake Basin as "functioning, but at risk" and directs that these areas will be among the highest priority for watershed and aquatic restoration. As described in section 4.1 of this Decision Notice, activities have been included that will help restore water and fisheries resources in the analysis area.

The Selected Alternative is consistent with the Environmental Justice Act. Executive Order 12898, issued in 1994, ordered federal agencies to identify and address the issue of environmental justice; i.e. adverse human health and environmental effects that disproportionately impact minority and low-income populations. Based on the composition of the affected communities and the cultural and economic factors, the Selected Alternative will have no adverse effects to human health and safety or environmental effects to minority, low-income, or any other segments of the population. Please refer to the Project Files, "Environmental Justice."

The Selected Alternative is consistent with the National Forest Management Act requirements related to resource protection. Implementation of features of the Selected Alternative designed to protect aquatic resources will meet the riparian management objectives of maintaining slope stability in potentially sensitive areas, maintaining stream temperature, and providing a long-term supply of large woody debris (EA, pp. 2-26 though 2-28, and 3-92 through 3-96). The Selected Alternative will best meet Forest Plan goals, objectives and standards for fuels management, based on the amount and type of fuels treatment, and will also reduce potential fire severity (EA, page 2-25, 3-55). Potential physical, biological, aesthetic, cultural, engineering, and economic impacts of the Selected Alternative have been assessed and are disclosed in the Environmental Assessment (Chapter 3 and the Appendices) with supporting information in the Project Files.

5. Monitoring

The Selected Alternative is consistent with specific monitoring requirements identified by the Forest Plan (Forest Plan, Chapter IV), as documented in the Environmental Assessment (by resource discussion in Chapter 3). Monitoring specific to this project includes:

(1) Monitoring of Best Management Practices (BMPs): BMPs will be incorporated into many different phases of the project. The District hydrologist will review the planned design of all road maintenance to assure compliance with BMPs. The hydrologist and District engineer will monitor all newly constructed, reconstructed and reconditioned roads to ensure they are built or restored to specifications. A sale administrator will visit each active cutting unit at a frequency necessary to ensure compliance with BMPs

and the timber sale contract. Minor contract modifications will be agreed upon and enacted, when necessary, to meet objectives and standards on the ground. (EA, p. 2-24)

(2) Monitoring of Decommissioned Roads: Decommissioned roads will be checked periodically to monitor effectiveness of erosion control, noxious weed control, and wildlife security. (EA, p. 2-24)

6. Consideration of Other Alternatives

Development of alternatives was based on the existing condition of resources, issues and concerns identified by the project team, other agencies and the public, and the purpose and need identified for the project. Additional documentation related to the process for the development of the alternatives is provided in the project files under "Alternative Development." Activities that would occur under the three action alternatives are identified in the tables below. ***No new activities would occur under the No-Action Alternative; therefore it is not displayed in the table.***

Table 5. Summary comparison of activities proposed in the Deerfoot Resource Area under each action alternative.

Activity	Alt. 2	Selected Alt. 4	Alt. 6
Proposed Vegetative Treatment (acres)	548	1,660	1,660
Commercial Thinning	*0*	*641*	*641*
Shelterwood Harvest	*0*	*750*	*750*
Underburn/Slash/Rehab (no commercial harvest/yarding)	*548*	*269*	*269*
Fuel treatments (Underburning)	548	1,660	1,660
Yarding systems (acres)	0	1,292	1,392
Skyline	*0*	*628*	*721*
Tractor	*0*	*65*	*79*
Helicopter	*0*	*599*	*592*
Stream crossings repaired or replaced	17	17	17
Road decommissioning	9.3	9.3	9.3
Road reconditioning (miles)	0	17	17
Road reconstruction (miles)	0	29	29
System road construction (miles)	0	1.15	1.72
Temporary road construction (miles)	0	0	0.63
Estimated timber harvest volume (million board feet – MMBF)	0	7.6	7.6
Cunits (CCF – one cunit is equal to one hundred cubic feet)	0	14,260	14,260

Alternative 1 (No Action)

The No-Action Alternative is required by NEPA and is the baseline for evaluating the effects of the action alternatives. Under this alternative, none of the activities proposed in the Deerfoot Resource Area would occur at this time. Implementation of the foreseeable activities would still occur. I did not select this alternative because there would be no active improvement in ecological conditions, no reduction in excessive fuels accumulations, and no reduction in the risk of high intensity stand-replacing wildfire. This alternative would not improve forest health, since the depleted seed source for ponderosa pine, western larch and white pine would not be restored through natural processes (EA, pp. 2-25, 3-145). Although Alternative 1 would not result in a decrease in late successional forests in the Resource Area over the short term, vegetative modeling predicts a substantial loss of canopy closure over the long term due to Douglas-fir root rot and other insect and diseases (EA, pp. 3-15, 3-24, and 3-30). Wildlife species associated with Ponderosa pine, white pine and western larch forests would remain below historic levels for the long term (EA, p. 3-149). No aquatic restoration activities (such as improved road drainage crossings) would be accomplished under the No-Action Alternative (EA, p. 2-10, 3-80). If culverts in the area fail during a flash flood and/or debris flow (which could be triggered by a large stand-replacing fire followed by rain or rain-on-snow event, or a rain-on-snow event on its own), the additional sediment pulse could result in adverse effects to fish populations and/or fish habitat (EA, p. 3-80). Also of concern is the fact that this alternative takes no preventative steps to protect human life and property within the resource area from an uncontrolled wildfire (EA, p. 3-54).

Alternative 2

This alternative was developed in response to comments received from The Lands Council during the scoping process, and as a way to re-introduce fire into dry-site ecosystems without utilizing a commercial timber sale to assist in fuels reduction prior to project implementation. Precommercial treatments of surface and ladder fuels such as thinning, slashing, pruning, piling and leave tree protection would have occurred to reduce the intensity of prescribed fire and potential mortality to the existing overstory without utilizing the option for removal of commercial-sized trees (trees larger than 7 inches in diameter at breast height). Since there would be no removal of commercial-sized trees, crown density would remain nearly the same as existing conditions, while surface and ladder fuels would be decreased as a result of the non-commercial fuels reduction treatments.

I did not select this alternative for implementation because the limited amount of area treated and the minimal effectiveness of this treatment to reduce potential fire behavior and intensity would not result in any significant preventative steps to protect human life and property within the Deerfoot Resource Area from an uncontrolled wildfire (EA, p. 3-55). In today's dense stands, it is usually necessary to begin restoration treatment with a "low thinning" to remove excess understory and weaker overstory trees that cannot be killed in an underburn without risking the mortality of desirable trees, or risking uncontrollable fire behavior (Arno et al. 1996). For this reason, Alternative 2 would only treat those stands that could be safely underburned using only noncommercial fuel treatments to a more limited extent than would the other action alternatives. Due to the constraints of treating only non-commercial sized fuels prior to the re-introduction of fire, Alternative 2 would include only those stands where noncommercial treatment of surface and ladder fuels would be sufficient to allow the re-introduction of fire without excessive mortality to the existing overstory. With this constraint, many stands in the Deerfoot Resource Area would not be candidates for treatment; consequently this alternative would restore the fewest acres compared to the other action alternatives.

While Alternative 2 does re-introduce some fire to sites, it would not trend species composition toward increased resilience over time (EA, p. 3-17). Species compositions, size classes and canopies would be similar to those under the No-Action Alternative. Predicted growth under Alternative 2 would be only slightly better than under the No-Action Alternative. Alternative 2 does not respond to the purpose and need in the Deerfoot Resource Area as fully as the Selected Alternative because it would not remedy the concerns associated with species composition (EA, pp. 3-17, 3-24, 3-30, 3-31).

Alternative 6

Alternative 6 would have the same silvicultural and fuels reduction treatments as Alternative 4, but would do so with more conventional logging systems such as skyline and tractor logging, rather than helicopter logging. In addition, the conventional logging would require the construction of 1.7 miles of system road within the project area, and 0.63 miles of temporary road construction would have occurred in the Yellowbanks Creek watershed. This stretch of road would have been made impassable after activities in order to discourage off-road vehicle use originating on private land.

The use of conventional logging systems would allow for a more economically feasible project, which would help ensure complete and effective implementation. The proposed road construction would contribute to the long-term transportation and vegetation management of the watershed, as well as facilitate the implementation of activities in the Deerfoot Resource Area. There would be very little difference between Alternative 6 and the Selected Alternative (4) in terms of peak flow changes, and only a minor difference in water yield increases (EA, p. 3-80). However, Alternative 6 would have an overall slightly greater risk in increased water yield and peak flows due to additional roadwork.

I did not select this alternative for implementation because Alternative 4 (the Selected Alternative) will accomplish the same objectives of the project with less road construction than Alternative 6, even though at a slightly higher financial cost.

Other Alternatives Considered But Eliminated From Further Analysis

During project development, other alternative concepts were considered but dismissed from further study primarily because they did not meet the purpose and need for the project. These included:

***Prescribed Fire with No Prior Timber Harvest as Fuels Treatment*:** This alternative was considered as a strategy to reintroduce fire into the ecosystem without treating stands for fuels reduction using either commercial or non-commercial methods prior to implementing a prescribed burning program. This alternative was eliminated from further consideration because it would result in unacceptable environmental impacts to area resources and would therefore not meet the purpose and need for the project.

***Prescribed Fire with Felling of Commercial Trees*:** This alternative analyzes the option of reducing fuels prior to the introduction of prescribed fire to the watershed using only non-commercial treatments. Thinning, slashing, pruning, felling and piling of these fuels would be a large investment with little return in the form of decreased fire intensity and severity. This alternative would not meet the purpose and need for this project, so it was eliminated from further study.

***Re-introduction of Fire in Old Growth Stands*:** In initial discussion of alternatives, the possibility of re-introducing fire into dry-site, allocated old growth stands was discussed. Restoring fire as a process would contribute to the retention of the historic structure and composition of drier site old growth stands. After an initial assessment, it was found that there are no allocated stands of old growth on the drier sites of the Deerfoot Resource Area.

***Commercial Thinning for Canopy Fuels Reduction/Prescribed Fire*:** This alternative would use a thin-from-below silvicultural prescription in an attempt to reduce the crown fire hazard in treated stands, but would not use regeneration treatments. Although this alternative would decrease the chances of crown fire in treated stands somewhat, applying a thin-from below prescription to high/moderate hazard stands (i.e., short-interval, fire adapted ecosystems) has little effect on lowering crown fire hazard (Fiedler et al. 2001, PF Doc. FF-26). This alternative would not restore historical conditions and would not trend vegetative conditions toward more ponderosa pine, western larch and white pine in many stands, and would only marginally reduce the overall risk of high-intensity, stand replacing fires. Those stands where a thinning treatment was appropriate based on site-specific conditions where included in the harvest alternatives, but for the reasons stated above, an alternative that included only thinning treatments was dismissed from further analysis.

Limiting Openings to Less Than 40 Acres: An alternative was considered that endeavored to achieve the purpose of this project while limiting openings to less than 40 acres (as documented in the Project Files, VEG-25). The project interdisciplinary team considered the alternative, and found that it would not be reasonable to expect a significant reduction in the risk of large, intense crown fires by limiting treatment areas to less than 40 acres. Limiting openings to 40 acres would further fragment the landscape of the area. The necessary arrangement of treatments under such an alternative would violate Forest Plan standards for scenery over much of the project area. This would be further complicated by additional road exposure in harvest units. Compared to smaller patch sizes, larger patch sizes are very beneficial to wildlife. Cover is not a limiting factor for wildlife in the Deerfoot Resource Area. In conclusion, an alternative focused on units less than 40 acres in size would not be as adaptive to current ground conditions related to project objectives, areas of resiliency, and areas with insect and disease concerns.

***Alternatives 3 and 5*:** Alternatives 3 and 5 were alternatives that were similar to existing Alternatives 4 and 6, but only treated a subset of the areas proposed for treatment in Alternatives 4 and 6. The subset included the driest areas, while leaving out the more moist stands that have a larger component of western larch and western white pine. The only difference between Alternatives 3 and 5 was the transportation plan. The transportation plan for Alternative 3 was the same as that for Alternative 4, and the transportation plan for Alternative 5 was the same as that for Alternative 6. Alternatives 3 and 5 were dropped from further analysis because there was not a substantial difference between these alternatives and Alternatives 4 and 6.

7. Public Involvement

Public interest and input were solicited and accepted during scoping and in review of the EA for a total period of five months, from mid-February to mid-July, 2003 (EA, pp. 2-4, 2-5). Scoping activities for this project occurred between February and May 2003, and included:

- *a legal ad published in the newspaper of record (Spokesman-Review) to notify the public of the project proposal*
- *notification in the "Quarterly Schedule of Proposed Actions" for the IPNFs to notify interested members of the public of the proposal*
- *a news article in the Spokesman-Review newspaper to provide the public with additional information*
- *a scoping letter to interested members of the public to share information and to request submission of public comments (4 letters were received in response)*
- *a public field trip to the area to provide information and respond to questions from the interested public (only Kootenai Environmental Alliance attended)*
- *letters to 534 landowners adjacent to the Resource Area and within the cumulative effects analysis area to gather information regarding their plans for private lands within the cumulative effects area (15 responses were received)*

The Environmental Assessment was mailed to 44 interested members of the public in June 2003. Five letters were received during the 30-day review period. Substantive comments based on review of the Environmental Assessment are addressed in Attachment A of this Decision Notice. Copies of all materials related to public involvement are provided in the Project Files ("Public Involvement").

8. Finding Of No Significant Impact

I have reviewed the direct, indirect and cumulative effects of the project activities as documented in this Decision Notice, the Environmental Assessment (Chapter 3 and Appendices), and the Project File. The setting of this proposal is in a localized area, with implications only for the landscape, drainages and stands in the analysis area. My consideration of the proposed action is based on its impact on the ecosystem, local communities, county, and at the affected resource level. It does not have any large or lasting effect on society as a whole, the nation, or the state.

I find that there are no significant beneficial or adverse impacts on the physical, biological, or social portions of the human environment, and therefore an environmental impact statement will not be prepared. The Selected Alternative is consistent with the management direction, standards, and guidelines outlined in the Forest Plan for the Idaho Panhandle National Forests. Fore more details and specific references to pages in the EA, please refer to Section 4 of this Decision Notice.

Significant impacts (both beneficial and adverse): Effects associated with the Selected Alternative are discussed in Chapters 2 and 3 of the Environmental Assessment. The impacts are within the range of those identified in the Forest Plan. The actions would not have significant effects on other resources identified and described in the Environmental Assessment and Project Files. Activities will be temporary and of low-impact. Harvesting and log hauling activity will increase traffic on Forest Service Roads and on county roads that are the primary access roads into the area. Precautionary signing will provide safety in areas of activity. No significant increase in water yields or sedimentation in the analysis area streams is expected, and State water quality guidelines will be met. Implementation of Inland Native Fish Strategy standards and guidelines will protect stream courses from sedimentation (EA, Chapters 2 and 3). It is my determination that the Selected Alternative will have no significant effects on public health and safety or on resource attributes of the project area.

Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farms, wet lands, wild and scenic rivers, or ecologically critical areas: The Selected Alternative will have no significant effect on unique resource characteristics. Surveys to locate heritage resources within the

Deerfoot Resource Area have been completed. All known heritage resource sites will be protected as directed by the Cultural Resources Management Practices (Forest Plan, Appendix FF). Any future discovery of heritage resource sites or caves would be inventoried and protected if found to be of cultural significance. A decision would be made to avoid, protect, or mitigate effects to these sites in accordance with the National Historic Preservation Act of 1966.

The degree to which the effects on the quality of the human environment are likely to be highly controversial: As used in the Council on Environmental Quality's guidelines for implementing NEPA, the term "controversial" refers to whether substantial dispute exists as to the size, nature or effect of the major federal action rather than to the existence of opposition to a use (Perry, 1991; PF Doc. DN-4). Scoping was completed to identify areas of potential controversy (EA, pp. 2-4, 2-5); areas of potential controversy were then identified as issues (EA, p. 2-7 to 2-9, and Appendix I). These issues were used in development of alternatives and mitigation measures, and for analysis of effects. Past monitoring has determined that actual effects of similar projects are consistent with estimated effects of the proposed activities. There is wide professional and scientific agreement on the scope and effects of these actions on the various resources, as cited in the discussion of effects to resources (EA, Chapter 3). Based on the findings of the analyses, the effects of the activities in the Deerfoot Resource Area on the quality of the human environment are not highly controversial.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risk: The planned actions are similar to actions implemented in other areas on National Forest System, state, county, and private lands. Effects will be similar to those of past actions. The analysis considered the effects of past actions as a frame of reference in conjunction with scientifically accepted analytical techniques, available information, and best professional judgment to estimate effects of the proposal. It is my conclusion that there are no unique or unusual characteristics of the area which have not been previously encountered that would constitute an unknown risk upon the human environment.

The degree to which the action may establish a precedent for future actions with significant effects or presents a decision in principle about future consideration: The Selected Alternative is not setting a precedent for future actions with significant effects. Management practices are consistent with the Forest Plan and with the capabilities of the land. This action does not represent a decision in principle about a future consideration.

Whether the action is related to other actions with individual insignificant but cumulative significant impacts: The combined effects of past, other present, and reasonably foreseeable actions are discussed in the Environmental Assessment; there is no indication of significant adverse cumulative effects to the environment (EA, Chapters 2 and 3).

The degree to which the action may adversely affect districts, sites, highway structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historic resources: There are no features in the area that are listed or are being considered for listing on the National Register of Historic Places. All cultural resources would be protected (Decision Notice, Section 5.9; and EA, page 2-23). The potential for impacts to undiscovered sites is addressed by compliance with Forest Plan standards and guidelines, and through the use of standard timber sale contract clauses.

The degree to which the action may adversely affect an Endangered or Threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973: It was determined that the proposed action may affect some specific Threatened, Endangered or candidate wildlife, fish, or plant species individuals which may occur in the area, but would not likely trend toward federal listing or result in a loss of viability. Refer to Section 6.9 of this Decision Notice for additional discussion. A Biological Assessment has been completed and is part of the Project Files. U.S. Fish & Wildlife Service reviewed the assessment and concurred with our findings.

Whether the proposed action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment: The proposal meets federal, state and local laws for air and water quality, streamside management, riparian areas, cultural resources, and Threatened and Endangered species, and meets National Environmental Policy Act disclosure requirements as described in this Decision Notice and the Environmental Assessment.

9. Summary of Decision Rationale

Implementation of these activities in the Deerfoot Resource Area will begin to trend the dry forests (which provide dry site habitat for a variety of birds and other wildlife) toward conditions that existed before decades of fire suppression. These sites will consist of large, well-spaced ponderosa pine and western larch trees that would discourage a crown fire from spreading from tree to tree. Also, the branches on the trees would be well above the ground and would not act as ladder fuels, taking a fire from the ground into the tree crowns. Surface fuels will be light, consisting primarily of shrubs and short grasses, with little downed woody material.

Implementing these activities in the Deerfoot Resource Area will also help minimize the impacts a wildfire would have on the nearby communities. Cohen (2002, personal comm.; PF Doc. REF-12) states that treating dry-site stands to reduce potential for high intensity fire is a good ecologically-based treatment that reduces firebrand production that tends to increase the fire spread. Maintaining sustainable ecosystems is consistent with protecting homes and values associated with those homes from fire (Cohen 2002, personal comm.; PF Doc. REF-12).

The Selected Alternative helps develop cost-effective fire programs by making substantial progress in reducing the potential intensities of wildfire, the costs of potential wildfire, and fire-caused changes in amenity values of the Deerfoot Resource Area (EA, p. 3-55).

10. Documents And Project Files

This Decision Notice summarizes some of the analyses that have led to this point in the process. More reports and analyses documentation have been referenced or developed during the course of this project and are part of the Project Files. All project files for the Deerfoot Resource Area project are available for review by the public. Please contact the NEPA Coordinator at the Coeur d'Alene River Ranger District (Fernan Office), (208) 664-2318, to review the files.

11. Appeal Rights And Implementation

This decision is subject to appeal pursuant to 36 CFR 215. Appeals must be submitted within 45 days after the legal notice of this decision is published in the Spokesman-Review newspaper. Hard copy (printed) appeals must be submitted to:

USDA Forest Service, Northern Region
ATTN: Appeal Deciding Officer
P.O. Box 7669
Missoula, MT 59807

Electronic appeals must be submitted to:

appeals-northern-regional-office@fs.fed.us

The subject line should contain the name of the project you are appealing. There are three acceptable formats for electronically filed appeals, including MS Word, Word Perfect, and rich text format (rtf). It is the appellant's responsibility to provide sufficient written evidence and rationale to show why my decision should be remanded or reversed. An appeal submitted to the Appeal Deciding Officer becomes a part of the appeal record. An appeal must meet the content requirements of 36 CFR 215.14. As a minimum, the Notice of Appeal must include:

- ✓ *Appellant's name and address, with a telephone number if available;*
- ✓ *Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);*
- ✓ *When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request;*
- ✓ *The name of the project for which the decision was made, the name and title of the Responsible Official, and the date of the decision;*
- ✓ *Any specific change(s) in the decision that the appellant seeks or any portion with which the appellant disagrees, and their rationale;*
- ✓ *Why the Appellant believes the Responsible Official's decision failed to consider the substantive comments; and*
- ✓ *How the appellant believes the decision specifically violates law, regulation, or policy.*

An appeal will be dismissed if the preceding information is not included in the Notice of Appeal. If no appeal is received, implementation of this decision may occur five business days from the close of the 45-day appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

I am the Responsible Official for this decision. For more information regarding this project, contact District Ranger Joe Stringer or Ecosystems Staff Officer Sherri Lionberger at the Fernan Office of the Coeur d'Alene River Ranger District, (208) 664-2318.

Cy Bolyard — 8-18-03

for RANOTTA K. MCNAIR — Date
Forest Supervisor
Idaho Panhandle National Forests

ATTACHMENT A
RESPONSE TO PUBLIC COMMENTS

Introduction

The 30-day public review of the Deerfoot Environmental Assessment began on June 11, 2003. Comments were received from the following groups and individuals:

#01 - Robert **Heacock**
#02 - Cecil W. **Hathaway**
#03 - Mike **Mihelich** (Kootenai Environmental Alliance)
#04 - Rick **Collignon** (Idaho State Parks & Recreation)
#05 - Rein **Attemann** (The Lands Council) and Mike **Peterson** (National Forest Protection Alliance) and on behalf of The Ecology Center and Upper Columbia River Group of the Sierra Club

Their substantive concerns are identified below, with our response. A copy of each letter in its entirety is provided at the end of this Attachment.

Substantive Comments received from Robert & Melanie Heacock (#1)

The Heacocks are residents of Hayden, Idaho, and provided comments via e-mail on their own behalf.

1-1. The Heacocks' comments were complimentary of the Deerfoot EA and project. "My thoughts are that the area does need to be protected in any way that is applicable. Protection from 4x4 use and abuse is important, as is returning the area to its natural state to control fires. There also needs to be preservation of the habitat that we so often take for granted." *(Comment Letter #1)*

The activities to occur in the Deerfoot Resource Area accomplish all of these desires, to varying degrees. Under the Selected Alternative, no roads will be closed that are currently open to motorized use on the District Travel Plan; however, steps will be taken to improve the effectiveness of existing closures (DN pp. 11-12; EA p. H-1). Implementation of the District Travel Plan will continue, resulting in more effective road closures and better enforcement of existing closures. This should trend towards increased wildlife security over time. (EA, p. 3-117). The Selected Alternative will be a significant stride in reducing the potential severity of a wildfire in the area.

Substantive Comments received from Cecil W. Hathaway (#2)

Mr. Hathaway is a resident in the Silver Valley, and provided written comments on his own behalf.

2-1. Despite having a PhD in civil engineering and his familiarity with much of the Coeur d'Alene River Ranger District, Mr. Hathaway was overwhelmed by the complexity of the Deerfoot EA. "Maybe if I had a degree in forestry and all of related subjects discussed in the report, I would understand it a lot better." *(Comment Letter #2)*

Although we strive to make our document "user friendly" for the public, the challenge is in presenting enough scientific information to satisfy legal and policy requirements while trying to simply state the problem, our findings, and the bottom line for our readers. We agree there is room for improvement, and will continue our efforts to find a balance.

2-2. Mr. Hathaway expressed support for removing dead timber from the area. "Dead timber should be removed to minimize potential fire problems should they occur." *(Comment Letter #2)*

The Selected Alternative will reduce potential fire severity and related problems in the event of a wildfire, not by salvaging standing dead trees in the area, but by reducing tree density through thinning or shelterwood harvests while leaving large trees, burning dead slash that is already on the ground or that accumulates as a result of the harvest treatments, and planting trees that are more resistant to insects, diseases and fire.

2.3. Roads and continued access are important to Mr. Hathaway. "…roads not only provide access for the public, they also provide expedient access for fire crews and the first few minutes are critical to fire suppression before the fire gets out of control." He is disappointed with the lack of road maintenance of forest roads. *(Comment Letter #2)*

Under the Selected Alternative, there are sufficient roads and equipment available to fire personnel to adequately respond to fire starts in the area. Human-caused fires have historically occurred much more often on private land in the Resource Area than on public lands in the area (EA, p. 3-47). There are a number of roads not available for general motorized use (in order to improve wildlife security), but which could be opened in the event of an emergency. The annual funding we receive for road maintenance simply does not stretch far enough to continually maintain all of the roads on the Coeur d'Alene River Ranger District.

Substantive Comments received from Mike Mihelich (#3)

Mr. Mihelich provided six pages of written comments on behalf of the Kootenai Environmental Alliance of Coeur d'Alene, Idaho.

3-1. Mr. Mihelich believes an environmental impact statement (EIS) should have been prepared, rather than an environmental assessment (EA). "The watershed analysis found in the previous Forest Service documents confirms that there is credible evidence the logging activities proposed with Alternatives 4 and 6 would result in significant environmental impacts to the degraded watershed…" *(Comment Letter #3, p. 2)*

In March 2002, a Notice of Intent (NOI) to prepare an EIS for the "Ponderosa Pine Restoration Area Project" was published in the Federal Register (Vol. 67, No. 48, pp. 11089-11090). That initial proposal encompassed two areas, including the area we refer to as the Deerfoot Resource Area. Proposed activities in the other (Two Mile) area were deferred at that time, and we rescinded the NOI (Federal Register, Vol. 67, No. 66, p. 16365). In a May 20, 2002 letter, we explained to the public that these areas would be addressed in separate analyses. Our May 29, 2002 letter to adjacent landowners also explained the change of focus. In May 2002 we published a NOI to prepare an EIS for the Deerfoot Ridge watershed (Federal Register, Vol. 67, No. 105, p. 38063-38064). Subsequent reviews determined there would not likely be significant effects as a result of implementing proposed activities in the Deerfoot analysis area, and the NOI was again rescinded. This decision notice includes a "Finding of No Significant Impact" (pp. 19-20), which means no EIS is required (FSH 1909.15, Chapter 40).

3.2. Mr. Mihelich maintains that predicted increases in sediment under either Alternatives 4 or 6 would be in violation of Idaho laws regarding Water Quality Standards (IDAPA 58.01.02.054.04). "Every creek or stream in Alternative 4 has an increase in sediment and every creek except one under Alternative 6 has an increase in sediment." Furthermore, he states that the increases of sediment that would occur under Alternatives 4 and 6 would not meet Forest Plan Water Standard #2. *(Comment Letter #3, p. 3)*

As shown in the EA (Table 2-8, p. 2-27), it is true that there would be an increase in each of the subwatersheds under Alternative 4 (and all but one under Alternative 6). There is no threshold for sediment; instead, specific guidelines are applied. In looking at the Guidelines for Changes to Sediment Yield (EA, p. 2-26), increases up to 20% indicate there is "slight potential that there would be a measurable increase in sediment or delay of watershed recovery." Increases in the Deerfoot Resource Area subwatersheds range from 0 to 17%. The same table describes overall effects to channel morphology and aquatic habitat based on overall changes in water yield, sediment yield and peak flows, indicating that Alternative 4 would result in potential change in channel morphology and habitat in fish bearing streams, but no chance of measurable changes. The analysis also indicated that all action alternatives would likely meet Forest Plan Water Standard #2, given required design criteria for all action alternative, state and site-specific Best Management Practices, and Inland Native Fish Strategy standards would be applied (EA, p. 3-94).

3.3. Mr. Mihelich had questions about the information in the Deerfoot EA regarding mature and old growth timber. "There is no discussion or explanation given in the Deerfoot Resource Area EA how the 11% replacement old growth that was to remain in the Deerfoot area as required in the Deerfoot Shamrock EA has now been reduced [to] 0% replacement old growth… The stand numbers for the stands that have old and mature trees that would be logged with Alternatives 4 or 6 are not disclosed in the EA." *(Comment Letter #3, p. 4)*

The Deerfoot Shamrock EA and DN were completed in 1982 to address potential effects of specific activities proposed at that time in *a portion* of the same watersheds as those in the Deerfoot Resource Area – the boundaries of the two analysis areas are not the same. There is no discussion of replacement old growth in the Deerfoot EA, only allocated old growth. During analysis for the Deerfoot EA, we utilized the 1987 Forest Plan standards for old growth, Regional old growth definitions incorporated into the Forest Plan, and more recent Forest Supervisor letters of direction for implementing Forest Plan old growth standards (PF Doc. VEG-16 through VEG-24). These standards did not exist at the time of the Deerfoot Shamrock project. Existing old growth has been validated and the findings documented in the Deerfoot Project Files (PF Doc. VEG-16, 17). Based on the amount of allocated old growth and

since the project activities will not occur in any allocated old growth, I find the Selected Alternative is consistent with old growth standards (EA, p. 3-27 through 3-29). Tree size (by stand) is provided in the Project Files, PF Doc. VEG-12.

3.4. Mr. Mihelich is concerned that there is insufficient data regarding fisheries in the analysis area. "The EA does not supply data regarding the average number of fish per kilometer of stream length that currently exist in each of the creeks in the analysis area. There is no information displayed regarding population trends for Westslope Cutthroat Trout (wct) in the analysis area over the past 25 years and no data displayed that shows the percent increase, if any, of wct fish populations in the watershed since 1978." *(Comment Letter #3, p.4)*

Existing fisheries conditions are described in Chapter 3 of the EA (pp. 3-71 through 3-78). Field data (including electrofishing surveys, stream information, photographs, etc.) are provided for each watershed (PF, Fisheries). The electrofishing report for each stream identifies the number of cutthroat found per 100 square meters, as well as population estimates. Viability of fish species is addressed in the EA (p. 3-96). Based on the distribution of species across the Forest, the lack of connectivity between large watersheds, and the limited cumulative effects area, implementation of any of the proposed alternatives were determined not to affect the viability of any threatened, endangered, sensitive or management indicator fish species on the IPNF. A Biological Assessment was prepared, documenting effects on fisheries under Alternative 4. The US Fish & Wildlife Service reviewed and concurred with our findings (PF Doc. BE/BA).

3.5. Mr. Mihelich identified concerns with the use of the WATSED model to predict sediment yield. Mr. Mihelich notes, "There is no indication the significant sediment routing weakness noted in the [WATBAL] Technical User Guide has been corrected in the WATSED model." Mr. Mihelich is also concerned that the WATSED model underestimated sediment production, citing the Kootenai National Forest's 2001 Rock Creek Final EIS. His third concern is that he believes the use of the year 1980 for a baseline with the model regarding sediment yield does not meet NEPA requirements regarding methodology and scientific accuracy. *(Comment Letter #3, p. 5)*

Use of the WATSED model is described in the EA (p. 3-59). The findings and conclusions of the Rock Creek project are not related in any way to our application of the model, nor its accuracy in our applications. The IPNF frequently validates the WATSED coefficients and estimates using long-term water quality monitoring networks on the IPNF (EA, p. 3-59). Findings of the validation are used in the interpretation of WATSED simulations to reach the final professional conclusions for the project. Effects to aquatics were not based on the WATSED model alone; the estimated responses are combined with other sources of information and analyses to help determine the findings of probable effects, including field review and Geographic Information System technology (EA, pp. 3-59 and 3-60). Runoff and peak flow changes are not detectable by the WATSED model after an average of 20 years from the time of harvest, based on the assumption that new vegetative growth aids in the interception and utilization of water derived from rain and snow melt (Patten, pers. Comm., 2003). Water yield may not entirely return to pre-harvest levels, depending on slope soils, climate, and aspect. Recovery may take up to 60 or 100 years, but the WATSED model is unable to detect the small changes beyond 20 years (WATBAL Technical User's Guide, Patten, 1989).

3.6. Mr. Mihelich points out that the Deerfoot Resource Area EA, page 3-12, does not list the number of acres of logging associated with the Yellow Stacel timber sale that occurred within the analysis area. "The classification of 1,244 acres as salvage logging does not appear correct given the amount of regeneration logging that has taken place within the Resource Area…" *(Comment Letter #3, p. 6)*

As shown in Table 3-VEG-1, salvage harvests have occurred at least once on a total of 1,380 acres from 1970 to the present (on 1,244 acres from 1990 to present). This information is drawn from the Timber Stand Management Resource System (TSMRS) database. Acres shown in the database are *activity* acres, not stand acres. Many stands have had multiple harvests during the last 40 years (some stands as many as four entries). There has been no harvest during the same time period on about half of the stands in the Deerfoot Resource Area (EA, p. 3-12). While stands may have had multiple entries, it is not possible to track if the same acres were harvested on re-entry, because stands are often larger than recorded activity acres (EA, p. 3-12).

Substantive Comments received from Rick Collignon (#4)

Mr. Collignon reviewed the Deerfoot EA and submitted comments as a representative of the Idaho Department of Parks and Recreation.

4-1. "The area is within the immediate view shed of Hayden, Dalton Gardens and Coeur d'Alene. The EA covered visual impact mitigation extensively. We believe that either of the action alternatives would have an acceptable impact to the majority of the public within the view shed." *(Comment Letter #4)*

We agree. Implementing specific mitigation measures will ensure that project activities meet Forest Plan standards for visuals (EA, p. 3-158).

Substantive Comments received from Rein Attemann and Mike Peterson (#5)

Rein Attemann and Mike Peterson submitted comments on behalf of The Lands Council, the National Forest Protection Alliance, and the Upper Columbia River Group of the Sierra Club (Spokane, Washington), Kootenai Environmental Alliance (Coeur d'Alene, Idaho), and The Ecology Center (Missoula, Montana). Kootenai Environmental Alliance (KEA) also submitted independent comments (see Comment Letter #3 from Mike Mihelich).

5-1. The two representatives were intrigued by the fact that their scoping comments were incorporated into an action alternative. "In reading through the EA, it is quite evident that Alternative B is the best suited for this project in terms of economics, ecological health, restoration, road density, wildlife security etc. vs. the preferred Alternative 2." *(Comment Letter #5, p. 1-4)*

Although they refer to Alternative B, the alternative reflecting their comments is Alternative 2. They also refer to the Forest Service's preferred Alternative 2, but the preferred was actually Alternative 4, as stated in the EA, p. 1-5. They cite eleven areas of the EA to support their preference for Alternative 2, but in 8 of the 11 areas they omitted key information. In deciding which alternative best meets the environmental needs of the area, the desires of the public, and National Forest management requirements, it is important to consider all of the effects and benefits as well as the trade-off of short-term effects vs. long-term benefits. Portions of the text omitted in their quotations are included below *in italics*.

a. **Risk of crown fires:** From p. 3-45, it's true that under Alternative 2 direct effects would include an immediate reduction in surface fuels on the acres that would be underburned. However, their next sentence was incomplete: "Figure 3-FF-10 shows that underburning would reduce flame lengths *somewhat over time."* They also omit important information found later in the paragraph: *"However…the canopy bulk density of the stands being burned would not likely be changed significantly, and therefore the potential for crown fire would likely not be changed significantly."* Also, *"On average, Alternative 2 would reduce flame lengths from those that would occur under Alternative 1, although they would then continue their trend upwards over time as fuels accumulate (see Figure 3-FF-10)."*

b. **Visual quality:** From p. 2-29, their statement regarding effects of Alternative 2 are accurate. Regarding Alternatives 4 and 6, important information from the end of the sentence was omitted: "Overall, the harvest will create a change in the appearance of the current landscape *but due to the placement of the units and the adjacency of the different treatments the units should compliment each other*."

c. **Economics:** From p. 2-30, their statements regarding economics are accurate when looking at the overall cost – Alternative 2 would cost less than the other action alternatives, because there would be no sale administration or road-related costs. However, there would also be less area treated, and less progress made in reducing potential intensity of wildfires.

d. **Water yield:** From p. 2-80, their statement regarding water yields under Alternative 2 is accurate. They did not include the information related to Alternatives 4 and 6: *"Stump Creek, Jim Creek, and Hayden Face would have peak flow and water yield increases from 5-10% over existing, which constitutes a slight potential that there would be a measurable increase in water yield and peak flow or delay of watershed recovery."* Increases in other streams in the area would be from 1-3% under these alternatives.

e. **Sediment:** Their statements from p. 3-89 (not 3-86 as cited) are accurate in that Alternative 2 would reduce sediment by 59 tons. Although misstated in the EA, Alternatives 4 and 6 would also reduce sediment by 59 tons. When considering <u>overall</u> sediment delivery (estimated sediment delivery minus the anticipated reduction of sediment), Alternative 2 would have 283 tons per square mile, and Alternatives 4 and 6 would have 322 tons, still below the existing level of 342 tons. None of the alternatives would impair beneficial uses within the Hayden Lake Basin; all would meet the intent of the Hayden Lake TMDL's.

f. **Soils:** From p. 3-104, their statements regarding the effects of alternatives on soils are true. Alternative 2 does not include road construction or logging, so there would be no direct effects from these activities. Alternatives 4 and 6 do include new road construction, so there would be irreversible compaction and displacement on those new road sites (just over one mile under Alternative 4, and about 2 ½ miles under Alternative 6 – see p. 2-10 of the EA).

g. **Northern goshawk:** From p. 3-120, their statements regarding direct effects to habitat for this species are accurate. They did not include statements regarding cumulative effects: *"Alternatives 4 and 6 would decrease nesting habitat by 77 acres, but [are] designed to restore preferred components of goshawk habitat over the long term…Improved road closures and road decommissioning proposed as part of the project will maintain or improve security following project activities…Since project design features and mitigation measures would avoid impacts to this*

species in the Deerfoot Resource Area and across the forest, it is unlikely that the proposed activities would cause declines in populations. Nesting and foraging habitat would be maintained in all three foraging areas, and Region 1 viability criteria…would be met. All action alternatives are consistent with Forest Plan direction to manage the habitat of sensitive species to prevent further declines in populations…these actions would be consistent with NFMA requirements for population viability…" (see p. 3-121 of the EA).

h. **Flammulated owl and white-headed woodpecker:** Their statement from p. 3-124 (not 3-134 as cited) regarding effects of Alternative 2 on habitat of these species are accurate in terms of short-term effects, but did not include the long-term effects: *"Over the long term, current mature/immature stands would increase in age and diameter providing some additional habitat for these species, but canopy closure in some stands would continue to decline as discussed under [the] no action [alternative]. Re-introduction of fire would benefit stands, but current distribution of ponderosa pine may not be improved."* Their statements regarding Alternatives 4 and 6 omitted important information that puts the level of effects in perspective: "These alternatives would result in a loss of 111 acres *(1.2%)* of suitable flammulated owl habitat *over 9,260 acres.* Shelterwood prescriptions proposed over 750 acres in the resource area will reduce available habitat and lengthen the time period for any potential habitat to reach suitable. *However, the effects to flammulated owl habitat as a result of this silvicultural prescription will be minimized since large ponderosa pine, western larch and white pine trees will be maintained where they exist and no snags will be removed…Portions of the 111 acres of shelterwood in suitable habitat may result in the retention of enough canopy closure to remain suitable, but all shelterwood acres are considered a loss of suitable habitat."* In other words, the analysis considered the worst-case scenario in terms of effects to suitable flammulated owl habitat.

i. **Black-backed woodpecker:** Their statements from p. 3-127 are accurate regarding direct and indirect effects of Alternative 2 on habitat of this species. They included the statement regarding short-term effects under Alternatives 4 and 6 (on p. 3-128, not 3-127 as cited), but omitted the long-term benefits: *"Where shelterwood harvests are proposed, mature and fire scorched trees would be retained that would provide some black-backed woodpecker habitat presently and into the future. These trees would also provide a future snag component and another age class as the stand regenerates. While this prescription will improve long-term snag habitat by perpetuating more resilient, longer-lived species, it* represents a possible decline in the quality of snag habitat due to removal of portions of the canopy over the short term."

j. **Fisher:** Their statements from p. 3-132 regarding direct and indirect effects to fisher are accurate, but do not include all of the predicted effects: "Alternative 2 would not decrease late successional habitat across the resource area, and all current fisher habitat would be retained. *Although the proposed prescribed burns would improve the resiliency of existing stands, loss of canopy closure as described under Alternative 1 would also occur."* "Both alternatives 4 and 6 would reduce late successional habitat (fisher) by a total of 425 acres (5%), *but would maintain the recommended 40% late successional forests, the minimum amount required for moderate fisher habitat. Although late successional habitat would be treated under these alternatives, the large diameter component of these stands would be maintained as the dense understory trees are the primary components that will be removed."* Table 3-WL-11 on p. 3-132 displays the amount of suitable and potential habitat affected. Alternatives 4 and 6 would affect only 16 acres of the 718 total acres of suitable habitat (not 15 acres as stated above the table), and would affect only 306 acres of the 6,627 total acres of potential habitat.

k. **Pileated woodpecker:** Their statements from p. 3-139 are accurate regarding the effects of Alternative 2 on pileated woodpecker habitat in the Deerfoot Resource Area. Their statements regarding Alternatives 4 and 6 apply only to the short term, omitting the long term effects: *"Over time, these alternatives would trend toward more suitable habitat for pileated woodpeckers as the goal of the proposal is to increase the distribution of older ponderosa pine forests that are used by this species."* (See p. 3-140.)

5-2. The two representatives conclude their comparison of alternatives by stating, "It is clear that the decision to log this area has already been made and has been tiered to the purpose and need of the project. It is very clear that the "analysis" has been written merely to justify the imminent decision rather than to disclose environmental effects." *(Comment Letter #5, p. 4)*

This proposal followed a process consistent with NEPA and Forest Service requirements, including public notification, scoping, and review. Conditions in the area clearly warrant action, as long as the predicted effects are within acceptable levels. No decision was made regarding what activities (if any) could occur until after completion of the analysis and public review process.

5-3. The two representatives have several questions regarding the soils analysis. They believe the Forest Service failed to conduct a full on-the-ground look at soils prior to completion of the EA: "The EA depends too much on timber stand inventory, soil maps, road

data bases and aerial photo's. Where were the "on the ground reviews" conducted within past harvest areas?" *(Comment Letter #5, p. 4)*

On the ground reviews were conducted to assess conditions within past harvest disturbance areas (EA, p. 3-98). Field notes are provided in the Project Files (PF Doc. SOIL-15).

5-4. Attemann and Peterson request additional information regarding soil compaction: "What is the compaction percent of all the logged areas from the 1960s, 1970s, 1980s and 1990s? Does that figure meet FSM guidelines and IPNF Forest Plan Standards? And will soil compaction from heavy machinery for yarding further compact existing conditions? And by how much? What are the mitigation measures that are designed to meet these guidelines?" Citing Regional Soil Quality standards included in the Forest Plan which specifies that 85% of an activity area (cutting unit) must have soil that is in satisfactory condition, they state, "This will not be met when 3,616 acres that have been previously logged over the past thirty to forty years will also be logged again under the Deerfoot Timber Sale." They point to units with soil disturbance in past harvest units: "Those units currently violate this standard and will not maintain current conditions, or future conditions." *(Comment Letter #5, p. 4)*

Existing data, field reviews, aerial photos, timber stand and road databases were used to determine the disturbance factor for each activity area (EA, p. 3-98). The disturbance factors represent an average percentage of detrimentally disturbed soils, obtained through past monitoring methodology on existing harvest units (EA, p. 3-98). Effects of harvest treatments are described in Chapter 3 of the EA (p. 3-105). There would be no increase in detrimental impacts in the proposed burn-only units. Of the proposed harvest treatments, 40 units have an average predicted detrimental effect of less than 3%, with the highest being 13% on four harvest units in which tractor work will occur. There are also four harvest areas in which tractor work has occurred in the past; these four have an average predicted detrimental effect of 21%. Two additional units (in which cable-yarding is proposed) were previously harvested and broadcast burned have an average predicted detrimental effect of 19.5%. Limiting use to the existing skid trails and decompacting those trails not needed for future management will begin to restore soils in these detrimentally disturbed units. (EA, p. 3-105).

5-5. Attemann and Peterson note, "…the roads, skid trails and helicopter landings that lace the area are not to be included in the analysis. The failure to disclose this information about the site-specific condition of the soils violates the Idaho Panhandle Forest Plan." *(Comment Letter #5, p. 4)*

The analysis and description of existing conditions address effects of past activities, while this analysis included potential effects to soils as a result of proposed logging systems, permanent and temporary roads, landings and fuel treatments (EA, p. 3-101). The following statements are included under direct effects to soils (EA, p. 3-102): "Coefficients for road construction used 35-foot widths, which take into account a 14-foot wide running surface and includes the cut and fill slope disturbance. Log landing areas associated with new road construction are accounted for in the road calculations. Log landings that are proposed outside of any harvest units are each calculated as one acre. These areas would be dedicated lands and their effect is irretrievable." The discussion of effects of harvest treatments also states, "Effects of 5 proposed helicopter log-landing sites have been calculated into the overall effects related to the proposed harvest treatments." (EA, p. 3-105).

5-6. Attemann and Peterson point to the soils discussion on p. 3-101, stating, "However, no other current or future projects are discussed, making the EA's soil analysis fall far short of that required by NEPA, even though pre-commercial thinning and commercial thinning are anticipated in future management (EA pg. 2-11). Also, no private activities in the watershed are discussed, a major and serious omission." *(Comment Letter #5, p. 4)*

The cumulative effects include the combination of direct and indirect effects from past, present and reasonably foreseeable activities, including opportunities for wildlife and watershed improvements, and noxious weed treatments (EA, p. 3-103, 106). Reasonably foreseeable activities within the Deerfoot Resource Area, the cumulative effects analysis area, and on adjacent private lands are identified in Chapter 2 of the EA (p. 2-5 through 2-7).

5-7. The two representatives assert the Deerfoot EA has "failed to adequately disclose and consider the cumulative impacts on numerous issues…" and identify several areas they feel are lacking. "A portion of the salvage harvest activities recently completed under the Douglas-fir Beetle Project was located within Elk Habitat Units 9 and 10. However, post-sale activities…are not completed yet. Because of this, some level of activity will continue to occur within the Deerfoot Resource Area over the next 2-5 years as a result of these activities. This represents the existing condition and does not include the effects of activities under the Deerfoot proposal nor is it included in the cumulative effects analysis, violating NEPA and FSH (EA pg. 3-143). *(Comment Letter #5, pp. 6-8)*

The cumulative effects analyses (by resource) considered the effects of past, ongoing and reasonably foreseeable activities. The effects of past activities are reflected in the existing condition. Ongoing and reasonably foreseeable activities are identified in Chapter 2 (EA, pp. 2-5 through 2-

7). This includes information relating to ongoing and reasonably foreseeable activities on adjacent private lands (EA, p. 2-5). The activities approved under the Douglas-fir Beetle Project are identified as an ongoing activity, by the associated sale name (for example, the Yellowhorse, Stumpjumper and Nilsen Beetle timber sales were all analyzed and approved under the Douglas-fir Beetle EIS/ROD). These activities are identified in Chapter 2 of the EA (Tables 2-2 and 2-3, p. 2-6), not by the name of the EIS or EA, but by the sale name. These ongoing activities have been considered in the cumulative effects analysis (EA, Chapter 3, by resource).

5-8. The two representatives ask, "…why are [roads that are officially closed, but have no barrier or sign and roads that are closed, but have some type of breached physical barrier] not incorporated into the miles per square mile calculations?" In their next sentence, they cite EA p. 3-148, where the EA states that "All breached barriers and ineffective road closures were accounted for in the elk habitat model…" but they ask "how and in what capacity? Also, were pioneered trails taken into account in the elk habitat potential model?" *(Comment Letter #5, pp. 6-8)*

Breached barriers and ineffective road closures are accounted for in the elk model (EA, p. 3-141; PF Doc. WL-5 and WL-6) and for species most affected by roads (PF Doc. WL-26 through WL-31). The elk model accounts for road use by assigning each different use a percentage that represents the degree to which the type of road use affects elk habitat potential. A field survey was done for roads and trails in the Resource Area, documenting the type of use (open, closed, type and effectiveness of barrier, pioneered trail, etc.). This information was put into a spreadsheet and mapped using GIS so that the different road uses were accounted for in the wildlife analysis (Project Files, Wildlife).

5-9. The two representatives contend, "The EA illegally relies on a future District Travel Plan that has not been finalized yet…" *(Comment Letter #5, pp. 6-8)*

The District Travel Plan was released to the public in June 2002. Over the next year, members of the public as well as Forest Service employees suggested changes to the Travel Plan. These recommendations were reviewed and the effects considered and documented. Revisions to the Travel Plan were issued in June 2003 (consisting of a Decision Notice, maps of affected areas, and the Forest Supervisor's Order). The Forest map for the Coeur d'Alene River Ranger District is in the process of being printed, and will be available for sale to the public by late summer.

5-10. The two representatives contend, "Most of the EA is based upon a flimsy premise that the forest needs massive and extensive human intervention to make it healthy again. However, the EA and associated documents are not precise in how to define forest health. " *(Comment Letter #5, p. 8)*

The premise of the EA is not that the forest needs massive and extensive human intervention, nor is it based on the broad term of "forest health," which is defined in the Acronyms/Glossary section of the EA (p. AG-8). The need for the proposed action is described in detail in Chapter 1 (pp. 1-2 through p. 1-5).

5-11. The two representatives state "…we were unable to find a definition of "historical range of variability" in the EA. Charts in the EA routinely compare "historic" conditions to "current" conditions (e.g. Table 3-4). What is "historic?"…How did you get the data? …what evidence refutes scientific research that stand-replacing fires occurred in ponderosa pine types?" *(Comment Letter #5, p. 8)*

The term "historical range of viability" is defined in the Acronyms/Glossary section of the EA (p. AG-9), with the following clarification: "In this EA, [historical range of viability] refers to the range of conditions that are likely to have occurred prior to settlement of the project area by Euro-Americans (approximately the mid-1800s), which would have varied within certain limits over time. HRV is discussed in this document only as a reference point, to establish a baseline set of conditions for which sufficient scientific or historical information is available to enable a comparison to current conditions.

5-12. The two representatives contend, "The Forest Service erroneously used post-logging photos as indicative of pre-settlement, open conditions. The EA uses an early 20th century photo of Rathdrum Prairie to show case the virgin timber and open ponderosa pine forest (EA Figure 1-4)…the Rathdrum Prairie is on the other side (west side of Hayden Lake) and at 2,200 feet in elevation. The vegetation is quite different." *(Comment Letter #5, p. 9)*

The vegetation in these two areas is not that different. Figure 1-5 (EA, p. 1-3) depicts one of the few remaining open ponderosa pine stands in the Deerfoot Resource Area, which is quite similar to the photo of the Rathdrum prairie early in the 20th century.

5-13. Attemann and Peterson argue, "Throughout the EA, the Forest Service talks about stand replacing fire as if they were unnatural… Why is there so little discussion of the beneficial role of stand-replacing fire?" *(Comment Letter #5, p. 9).* **Also, "The analysis is terribly illogical in its treatment of larch…Stand-replacing fires favor larch as they do better in open sites yet the EA tries to avoid these types of fires while at the same time trying to encourage larch. This sophistry is merely an excuse to log as that is the agency's solution to all ills, so-called forest health and child neglect included."** *(Comment Letter #5, p. 10)*

Stand-replacing fires are not unnatural, nor are they described as such in the EA. Benefits of fire are discussed

in Chapter 3 (EA, p. 3-36): "Lower severity fires structured how the landscape responded when a lethal severity fire did occur. The lower severity fires increased the proportion of the landscape with big trees and open canopies that would not sustain a crown fire. Reduction of ladder fuels would mean that even high intensity fire might not reach tree canopies in some cases. The larger trees that grew as a result of this thinning would be more likely to survive even intense fire." The concerns addressed in the EA are related to the *intensity* of such fires, especially near the urban interface (EA, p. 1-3). "Changes in surface, ladder and crown fuels have resulted in the potential for an increase in fire intensity and severity when fires do start. The arrangement and amount of fuels can now carry a fire into the crowns of trees, resulting in fires of an intensity and severity outside of the historic fire regime of the resource area. These intense fires are difficult to suppress, threaten human life and property, and can result in the loss of key ecosystem components." (EA, p. 2-8). "A current danger is stand-replacing wildfire with fuel accumulations so high that burns are extremely hot, resulting in critical reductions of stored nutrients, with accompanying losses in potential productivity." (EA, p. 3-36).

5-14. The two representatives assert, "They also fail to analyze the negative impacts of unnatural spring burning fails to adequately analyze the direct, indirect and cumulative impacts of the project on vegetative cover and fire regimes." *(Comment Letter #5, p. 9)*

The degree of each effect of a prescribed fire can be controlled by careful ignition in the appropriate weather conditions." (EA, p. 3-41). "…Specifically, changes in aspects and shaded draws were commonly used as boundaries; these areas often have higher fuel moistures (especially in the spring), and in may cases will burn with very little intensity, if at all. Even with careful forethought and planning, prescribed burning can be uncertain, and small burned areas outside of the designated treatment areas should be expected. These "slop-overs" are commonly relatively small, contained quickly, and should not cause significant effects," (EA, pp. 3-41 and 3-42).

"Historically, prescribed burning on the Coeur d'Alene River Ranger District occurs in the spring and fall seasons over a total time span of 45 to 60 days during each season. All burning complies with federal, state and local regulations. Management practices include, but are not limited to, burning under spring-like conditions (high moisture content in fuels, soil and duff) to reduce emissions, provide for retention of large woody debris, and to protect the soil," (EA, p. 2-13). "Prescribed broadcast burning and underburning would be of low intensity and would occur when the soil's surface horizon has at least 25% moisture content in order to protect the site's surface organic component," (EA, p. 2-17).

5-15. The two representatives point out, "Many timber sales in the past few years in the interior West have claimed a need to return conditions to a "pre-settlement" status and "open park-like" stands. We question the authenticity of this model and cite two references that seem to refute the idea that our forests were far more open…Why is the agency using a model that may better fit the Southwest for so-called ponderosa pine stands in the Northern Rockies?" *(Comment Letter #5, p. 10)*

The activities in the Deerfoot Resource Area are not intended to return conditions to a pre-settlement status or open park-like stands. One of the objectives is to restore historical conditions *in dry-site ecosystems based on the fire ecology of these forest types.* "This project seeks to restore natural processes and maintain a range of forest composition and structure using historic conditions not as a goal, but as a reference," (EA, p. 1-4).

The analysis for fire/fuels in the Deerfoot Resource Area was based on information from existing databases (Timber Stand Management Record System [TSMRS], and Field Sampled Vegetation [FSVeg]). These databases were developed from stand exam information, historical records and aerial photo interpretation (EA, p. 3-34). The Fire & Fuels Extension [FFE] to the Forest Vegetation Simulator [FVS] was used to link the changes in forest vegetation (due to growth, natural or fire-based mortality, and management) with changes in fire behavior, using existing models and information wherever possible.

5-16. Attemann and Peterson state, "The current vegetation is an expression of what grows best on the sites. Extensive past logging in this area proves that intolerant species are not less competitive because of a lack of sun, because there is plenty in the clear-cuts…If the premises in the EA were correct -- that logging is needed to favor intolerant seral species --then intolerant species should already dominate in the analysis area. …Furthermore, the actual decline in intolerant species may not be that great, if the charts in the EA are to be believed. That would support the suspicions of conservationists that the agency is making up crises as a justification for logging." *(Comment Letter #5, p. 10)*

Although no page or chart number is referenced, the chart most likely referred to by Attemann and Peterson is Figure 3-VEG-19 (EA, p. 3-22), depicting the cumulative effects to forest cover types in the Deerfoot Resource Area.

The "dry habitat type group" represents about 26% of the Resource Area, and 88% of this landscape is dominated by Douglas-fir and grand fir (EA, pp. 3-12 and 3-13). The "moist habitat type group" represents approximately 72% of the Deerfoot Resource Area. Currently, 76% of this landscape is dominated by grand fir and Douglas-fir (EA, p. 3-6).

The objective of Alternatives 4 and 6 is to restore dry site vegetation composition and structure toward increased

resiliency, in combination with treatment on landscape-size patches of moister adjacent habitat (EA, p. 3-18). The majority (63%) of proposed harvest is associated with drier sites in the Resource Area, in response to the purpose and need (EA, p. 3-25). The greatest change in species across the entire Resource Area would occur in ponderosa pine, which would more than double (555 to 1,455 acres). There will be substantial variability within treatment areas, because the amount of trees retained is based on what is available on the site. Wildlife, aquatic and visual concerns also played a part in maximizing retention on sites while trending the overall area toward restoration (EA, p. 3-18). The changes in species composition from Douglas-fir and grand fir to more resilient and the more desirable ponderosa pine, western larch and white pine will occur at the time of planting in harvested stands (EA, p. 3-22).

5-17. The two representatives contend, "…it may well be the agency's claim that logging mimics fire – the rationale for all the alternatives except two (Alternative 1 and 2) -- is wrong…Has the agency considered evidence that forest conditions are more reflective of climate change than fire suppression? …The EA omits climatic change as a reason for current forest composition in the face of evidence we are undergoing rapid and unprecedented global climate change." *(Comment Letter #5, p. 10)*

Harvest does not duplicate all aspects of fire disturbances, because trees killed by fires prior to Euro-American settlement were not harvested (EA, p. 3-20). Alternative 4 uses a combination of tools (including precommercial treatments of understory and surface fuels, a variety of commercial harvest methods, prescribed burning, and tree planting) to reduce existing fuels levels and restore ponderosa pine stands, in addition to watershed restoration activities (EA, pp. 2-10 and 2-11). These activities will occur in only a portion of the Deerfoot Resource Area, based on site-specific factors such as physical, soils, climate, habitat type, vegetative composition conditions as well as interdisciplinary objectives, NEPA decisions, other regulatory guidance, and Forest Plan goals, objectives and standards (EA, p. 2-13). The analysis of conditions in the Deerfoot area discusses the influence of climate on vegetation (EA, p. 3-5 and 3-6). While the vegetation in the Coeur d'Alene Subbasin reflects the climatic conditions (EA, p. 3-6), current forest composition in the analysis area is primarily the result of disturbances, including fire, insects and diseases, and timber harvest (EA, pp. 3-7, 3-8). The Forest Service is continuing research into global change through participation in the US Department of Agriculture's Global Change Research Program. For more information, please visit the Forest Service's Northern Global Change Research Program website at: http://www.fs.fed.us/ne/global/.

5-18. Attemann and Peterson note, "Hessburg and Lehmkuhl (1999) question the common assumption in the EA that fuel levels are too high for prescribed burning to take place before thinning…" *(Comment Letter #5, p. 11)*

As a result of this comment, Hessburg and Lehmkuhl's Science Peer-Review Summary of the Wenatchee National Forest's Dry Forest Strategy was reviewed and evaluated (a copy is provided in the Project Files, DN). The review involved 6 scientists with specific expertise in the fields of fire ecology, forest landscape ecology and management, forest entomology, forest soils, forest hydrology, and wildlife ecology. The 6 scientists also had research experience working in the eastern Washington ecosystems were the Strategy is applicable. Each reviewed questions pertaining to their field of expertise. When asked which treatment options hold the most promise for moving landscapes toward native structure and functioning, both reviewers favored active management treatments using a diverse combination of silvicultural and prescribed fire treatments; both were strongly averse to implementing no active management, prescribed natural fire, or no-active fire suppression management scenarios. They suggested that a fire alone scenario could be successful, but perhaps not as successful and with less precision than a thin-burn strategy. It would be difficult using prescribed fire only to remove the larges of the small size classes. For example, there would be ecological consequences of eventual consumption of most or all woody debris, damage to residual trees, added smoke from logs consumed by fire that could have been utilized, the visual effect of leaving many small snags, and limited control over residual tree spacing.

Idaho Fish & Game recommended the use of selective harvest to decrease stand density prior to prescribed burning (EA, p. 2-8). Precommercial treatments of understory and surface fuels will occur *where necessary* in conjunction with the commercial treatments (EA, p. 2-11). The Selected Alternative includes 269 acres where the treatment includes underburning to remove fuel loading and reduce shrub competition for planted seedlings, with no commercial timber harvest. Planting will occur on about 40 to 50% of the area. The sites identified for this combination treatment previously had selective thinning or salvage harvest, and canopy has already died or been removed (EA, p. 3-21).

An alternative was considered that that would implement a prescribed burning program with no prior timber harvest. This alternative was eliminated from further consideration because it would result in unacceptable environmental impacts to area resources, and would therefore not meet the purpose and need for the project (EA, p. 2-24 and Appendix I, p. I-5).

5-19. The two representatives recommend that all the districts on the IPNF adopt the US Forest Service's own fire ecology and science by Jack Cohen. Landscape treatment away from communities is irresponsible to the communities at risk." They included a copy of the "Hayman Fire Case Study Analysis Preliminary

Findings" to support their views on effects of thinning on fire behavior. *(Comment Letter #5, p .12)*

While the Kootenai County FireSmart program is accomplishing fuels reduction work in the home ignition zone, this project will focus on lands that are outside the home ignition zone, but in relatively close proximity to communities (EA, p. 1-6). Cohen states that treating dry-site stands to reduce potential for high intensity fire is a good ecologically based treatment that reduces firebrand production that tends to increase the fire spread. He also states that maintain sustainable ecosystems is consistent with protecting homes and values associated with those homes from fire (DN, p. 21; EA, p. 1-6; PF Doc. REF-12). The project fire/fuels specialist has reviewed the Hayman Fire Study, and concurs with many of their findings, which indicate similarities in conditions between the Hayman fire area and the Deerfoot Resource Area, and supports the basis for project activities. For example,

- *The potential for extreme fire behavior was predisposed by drought (Hayman Fire Study, p. 5).* Conditions in the Deerfoot Resource Area are extremely dry as a result of a long-term drought that persists over much of the interior West.
- *Continuous surface and crown fuel structure in many ponderosa pine and Douglas-fir stands rendered them susceptible to torching, crown fire, and ignition by embers, even under moderate weather condition (Hayman Fire Study, p. 5).* Stands in the Deerfoot Resource Area are characterized by thickets of sapling and pole-sized fir, dense Douglas-fir with root rot, and scattered ponderosa pine. The presence of species less tolerant of insects, disease and fire, and the increased fuel loading due to fire suppression has put these stands at greater risk for large, high-intensity crown fires (EA, p. 1-4).
- *Continuous fuels across the landscape surrounding the South Plate River drainage afforded only limited opportunity for significant disruption of fire growth or for improved suppression. The few large areas that recently experienced wildfires or prescribed burn produced significant but isolated effects on fire growth (Hayman Fire Study, p. 5).* Treatments under the Selected Alternative will be part of a comprehensive plan aimed at restoring ponderosa pine throughout its full biological range in the Deerfoot Project Area (EA, p. 2-11).
- *Cutting treatments where surface fuels were not removed experienced high surface fire intensities but were less likely to support crown fire (Hayman Fire Study, p. 6).* Under the Selected Alternative, fuels reduction treatments will occur on all areas where harvest occurs (EA, p. 2-10). Precommercial treatment of understory and surface fuels will occur where necessary in conjunction with the commercial treatments (EA, p. 2-11). Site preparation and/or fuel treatment may include a combination of slashing, pruning, prescribed burning, grapple piling or hand piling, depending on site conditions (EA, p. 2-13).
- *No fuel treatment areas were encountered when the fire was small. The fire had time and space to become broad and generate a large convection column before encountering most treatment units (Hayman Fire Study, p. 7).* The more area treated to restore and maintain stands toward historical species composition, the better the alternative meets Forest Plan goals. Alternatives 4 and 6 would treat the most area, thereby best meeting the goals, objectives and standards of the Forest Plan. The Selected Alternative (Alternative 4) will make significant progress in reducing the potential intensities of wildfire in areas affected by past activities and fire suppression (EA, p. 3-55).
- *Few fuel treatments had been performed recently, leaving most of the landscape within the final fire perimeter with no treatment or only older treatments. This is significant because the high degree of continuity in age and patch structure of fuels and vegetation facilitates development of large fires that, in turn, limits the effectiveness of isolated treatment units (Hayman Fire Study, p. 7).* Records show that prescribed burning has occurred in a relatively small portion of the Deerfoot Resource Area in the past (EA, p. 3-42). As stated above, Alternatives 4 and 6 would treat the most area, thereby best meeting the goals, objectives and standards of the Forest Plan.

Also of significance is the fact that, following the fire, stakeholders (individuals, organizations and communities in the area of the fire) indicated they preferred any of six different active fuel management strategies (combinations of prescribed fire, mechanical removal, and chemical spraying) to doing nothing, which would be tantamount to letting the forest grow and waiting for an ignition source (Hayman Fire Study, p. 17).

5-20. The two representatives ask, "Why is there a singular reference to fuel break construction in Table G-TES-1 of the EA? …Does the proposed action call for fuel break construction?" *(Comment Letter #5, p. 12)*

The table title is misleading – there is no fuel break construction proposed in the Deerfoot Resource Area. As described in the paragraph above Table G-TES-1, the table displays the risk of effects to rare plants from various types of disturbance and activities (EA, Appendix G, p. G-2). The level of risk to Sensitive plants from various types of disturbance was used in the evaluation of environmental consequences. The table also includes the risk of adverse impacts to Sensitive plants as a result of stand-replacing wildfire, which is certainly not a proposed activity, but is displayed for information purposes.

5-21. Attemann and Peterson state, "The EA fails to establish a dbh size limit on trees to be logged. The casual language only offers a false sense of retaining any sizeable trees… The FS can use their own discretion by

being allowed to select ponderosa pine or western larch for removal when they occur in a very dense stand that cannot be safely underburned without thinning (EA pg. 2-13). We recommend the IPNF to implement the east side screens as recommended by ICBMP which puts a 21" dbh tree size limit for the Deerfoot Project." *(Comment Letter #5, p. 12)*

It is the intent that large ponderosa pine, western larch and white pine trees (18 inches or greater diameter) will remain on site (which will be reflected in unit design and layout), unless removal is unavoidable due to safety reasons or other special circumstances (DN, p. 11 and EA, p.2-18). As a result, it is not practical to identify an absolute limit on the diameter of trees that could be removed during project activities.

5-22. The two representatives identified a number of concerns related to protection of Management Indicator Species (MIS) and their habitat. "The IPNF will not employ the most current, relevant science and has failed to monitor these MIS and their habitat. Alternative 4…would continue the Forest Service-facilitated degradation of habitat for species depending upon old growth, live and dead trees providing opportunities for cavity nesting, and large pieces of downed wood on or near the forest floor…" *(Comment Letter #5, p. 13)* **The two representatives also argue the EA does not disclose if the IPNF is meeting Forest Plan old growth standard 10(b), which requires the FS to maintain at least 10 percent of the forested portion of the IPNF as old growth.** *(Comment Letter #5, p. 19)*

Methodology used in the analysis of habitat for management indicator species is based on findings and recommendations of the Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin, the Geographic Assessment for the Coeur d'Alene River Basin, the Roads Analysis Process for the Deerfoot Project, and the District Travel Plan; recorded species observations, habitat models assessing suitable and potential habitat, applicable scientific research, literature, management recommendations, and conservation strategies (EA, p. 3-108). Wildlife species known to occur on the IPNFs were screened to determine relevancy to the Coeur d'Alene River Basin and to the Deerfoot Resource Area by reviewing sighting records, planning documents, habitat suitability models, historic records, and scientific literature (EA, p. 3-109). Allocated old growth in the analysis area is described in Chapter 3 (EA, pp. 3-13 and 3-14). Effects to old growth management indicator wildlife species are also described (pp. 3-137 through 3-140), as is snag and down wood habitat (pp. 3-148 and 3-149). All of the proposed alternatives would meet Forest Plan standards related to old growth, including standard 10(b) (EA, pp. 3-27 through 3-29). No alternative proposed harvest in old growth. Based on design features and mitigation (DN, pp. 11-12 and EA, pp. 2-21 and 2-22), snag management will meet or exceed Forest Plan requirements. There will be little reduction in snags as a result of project activities in the Deerfoot Resource Area, since all existing snags will be retained unless they pose a threat to forest workers (EA, p. 3-114, 3-153). Management Indicator Species, old growth, and snags are all monitored through the Forest Plan (Forest Plan Monitoring Reports; PF Doc. DN-3 and Project Files, Wildlife).

5-23. Attemann and Peterson state, "The Ecology Center January 25, 2000 letter to the Forest Supervisor identified several monitoring items for which Forest Plan monitoring was not done, or was performed inadequately. Consider this letter from the Ecology Center as part of our EA comments." *(Comment Letter #5, p. 13)*

In their comments on the Iron Honey Draft EIS and Final EIS, representatives of the Ecology Center and The Lands Council (and several other projects on which they've commented over the past three years) asked that this letter to the Forest Supervisor be incorporated as comments. The Forest Supervisor has consistently responded that such an approach to public comment is insufficient and does not meet the requirements of commenting on Forest Service proposals. "Comments on an environmental impact statement or on a proposed action shall be as specific as possible and may address either the adequacy of the statement or the merits of the alternatives discussed or both," (40 CFR 1503.3[a]).

5-24. The two representatives charge the EA is tiered to several documents, but fails to "identify what components and information is being used and how to analyze issues and concerns." *(Comment Letter #5, p. 20)*

The EA cites a number of documents that guided this project (including the National Fire Plan, ICBEMP, IPNF Forest Plan, Geographic Assessment for the Coeur d'Alene River Basin, and the Kootenai Wildland Urban Interface Fire Mitigation Plan), and briefly states how this project is consistent with their direction and guidance (EA, pp. 2-1 through 2-4). Information from the documents is also provided in the Chapter 3 discussions for each resource. Applicable pages from each reference are provided in the appropriate Project File, with a cover sheet identifying how the reference was utilized in the analysis. Project Files are available for review upon request (EA, p. 1-7).

5-25. Attemann and Peterson point out statements in the EA regarding effects of a large wildfire on local communities, and ask, "Since when has a Forest Service NEPA document taken into account the impact of home evacuations on the community?" They state, "If that is such a huge concern than the Forest Service needs to allocate more resources to treat and create defensible space within a half mile Wildland Urban Interface zone." *(Comment Letter #5, p. 20)*

The need for action in the Deerfoot Resource Area was derived from the Forest Plan, Wildfire Hazard-Risk

Assessment for the Coeur d'Alene River Ranger District, National Fire Plan, Interior Columbia Basin Ecosystem Management Project, Geographic Assessment, and the Kootenai County Wildland Urban Interface Mitigation Plan (EA, p. 1-2), all of which address fire management and control, and effects on communities. Additional studies (EA, pp. 1-3, 1-6, and 3-32 through 3-55) also support the brief discussion of the potential effect on communities (EA, pp. 3-52 and 3-54).

5-26. The two representatives claim, "The Deerfoot Project is another typical deficient timber sale in which the costs for preparing, analyzing and implementing the proposed Alternative far exceeds the timber sale receipts… The FS's preferred Alternative 4 is the most costly - $1,725,000 verses Alternative 2 (no commercial timber sale) of only $64,000…" *(Comment Letter #5, p. 20)*

In reading the financial analysis in Chapter 3, specifically the Present Net Value (PNF), Alternative 2 would be more expensive to implement than Alternative 4 by about $125 per acre (EA, Table 3-FIN-6, pp. 3-164 and 3-165). The cost for slash disposal and site preparation work is lower under Alternative 4 because the sale purchaser would accomplish a portion of it, reducing the amount of appropriated taxpayer monies that would be needed. These costs are projected within the modeled bid price and displayed on the alternative spreadsheets in the Project Files (Finances). In comparison, Alternative 2 costs do not incorporate planting fire-resistant species (Alternative 4 does), Alternative 2 would treat less than one-third as many acres as Alternative 4, and Alternative 2 would not respond as well to enhancing the economy of the local community (EA, pp. 162 through 3-166).

5-27. Attemann and Peterson point out the comparison of alternatives in Table 2-4 and the comparison of costs for each treatment in Table 2-14 are not consistent in regard to slash disposal on non-harvested acres. Also, they note there is no cost analysis for underburning under any alternative, even though Table 2-4 identifies the acres of prescribed burning to occur. *(Comment Letter #5, p. 20)*

The tables in Chapter 2 are summaries of the financial analysis; Tables 2-4 and 2-14 do not both display the same level of detail. In the discussion of financial effects in Chapter 3, the cost of underburning (both in harvest and non-harvest units), as well as other fuel-related work are clearly displayed in Tables 3-FIN-5 and 3-FIN-6. Methodology used for the financial analysis is described in the EA (pp. 3-159 through 3-161).

5-28. The two representatives contend the Forest Service did not disclose the costs of the proposed action, failing to complete an adequate cost-benefit analysis. "Costs of conducting the NEPA process, administering the timber sale, road construction, road maintenance, mitigation, monitoring and any other cost incurred by the Forest Service in association with the proposal should have been disclosed in the EA." *(Comment Letter #5, p. 21)*

A financial analysis was conducted for the Deerfoot proposal and disclosed in the EA (pages 3-159 through 3-167). Forest Service policy (Forest Service Handbook 2409.18, Section 32) sets a minimum level of financial analysis for timber sale planning (EA, page 3-167). The financial analysis is used to compare the alternatives and to show that the costs are reasonable to achieve the desired end results. Non-commodity values were not included in this analysis because these resources are evaluated under the specific resource section. For the purposes of complying with NEPA, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are qualitative considerations (40 CFR 1502.23).

5-29. The two representatives discuss the number of total roads the Forest Service manages and administers. "The EA claims that all new construction roads on the long-term plan which were not incorporated into the Deerfoot project will be evaluated through future analysis at the time their need is established. Not taking into account the new 1.15 miles of roads to be build under Alternative 4 violates NEPA and the Forest Service Handbook." *(Comment Letter #5, p. 21-22)*

The number of roads managed nationwide by the Forest Service is outside the scope of this proposal. The statement quoted by Attemann and Peterson is from Appendix H of the EA (p. H-5). This does not refer to the 1.15 miles of new road construction proposed under the Deerfoot Resource Area project. It simply means that if new roads were proposed for construction in the area in the future, effects would be appropriately evaluated under the NEPA process at that time. New road construction proposed under the Deerfoot EA is displayed in Table 2-4 (EA, p. 2-10) was considered in the analysis, and effects are disclosed in Chapter 3 by resource (for example, Fire/Fuels, p. 3-47; Aquatic Resources, pp. 3-82 through 3-84; Soils, pp. 3-102 through 3-104; Wildlife, p. 3-115, 120, 121, 125, 128, 132, 135, 137, 145, 149, etc.; and Scenery, p. 3-158).

5-30. Attemann and Peterson also commented, "road closures that use gates and earth berms have proven to be ineffective... To think that the Forest Service will effectively close the 1.15 miles of new roads and nearly 30 miles of reconstructed roads under Alternative 4 roads for wildlife security is unrealistic." *(Comment Letter #5, p. 22)*

Implementation of the District Travel Plan will continue, resulting in more effective road closures and better enforcement of existing closures. This should trend towards increased wildlife security over time (EA, p. 3-117, 3-121, 3-133, 3-135, 3-145, and 3-148).

#01

"robert heacock" <heacock1@mindspring.com>

To: <karneson@fs.fed.us>
cc:
Subject: Deerfoot

06/10/2003 08:03 PM

Wow, thanks for the CD. A well done document, with a lot more science then most people realize

My thoughts are that the area does need to be protected in any way that is applicable. Protection from 4x4 use and abuse is important, as is returning the area to its natural state to control fires. There also needs to be preservation of the habitat that we so often take for granted.

I applaud your efforts to manage and preserve the forest wisely. Please continue your efforts. Feel free to let me now if there is anything I can do to assist this or any other FS project

Thanks

Robert & Melanie Heacock

14675 N Rollins Beach Loop-Hayden

13908 East 27th Ct – Veradale, WA 99037

509-924-4020

509-328-9303

heacock1@mindspring.com

5548 N. Pacific Ave.
Coeur d'Alene, Id 83815
June 24, 2003
Ph. 208-765-7639

#02

Rec'd 26 June 2003

Sherri Lionberger
Fernan Ranger Station
US Forest Service
2502 E. Sherman Ave.
Coeur d'Alene, Id 83814

Dear Ms. Lionberger:

I have just waded through 317 pages plus maps of an Environmental Assessment and I am exhausted. Although I have a PhD in civil engineering and am quite familar with the Fernan Ranger District because I worked for the District for 4 summers from 1945-48, and I ride my motorcycle in these mountains to pick berries and enjoy the scenery, I must admit the report overwhelms me. Maybe if I had a degrees in forestry and all of related subjects discussed in the report, I would understand it a lot better.

The Deerfoot Ridge area strikes me as like much of the forest. Dead timber should be removed to minimize potential fire problems should they occur. I'm partial to white pine and western larch as species to promote but I recognize these trees won't grow everywhere. So, plant the trees that will grow but continue with the tree planting program.. We were doing that sort of thing back in the '40s and it still makes sense. Roads are criticized as demons but they not only provide access for the public, they also provide expedient access for fire crews and the first few minutes are critical to fire suppression before the fire gets out of control.

I have been disappointed with the lack of maintenance of the forest roads. The old Ohio Match road has been in desperate need of grading and even some graveling. I don't think all of the forest roads need to be paved (although that is nice) but it isn't consistent with the environment in which the roads are located. I sense that some of the roads haven't been graded in years. (I walked behind the grader picking rocks for one summer).

I really hate to see the USFS putting so much effort into a report that I suspect few will read and even fewer will understand. I guess this is a legal requirement but if this report could be condensed to 10 pages and explained in language that the average person can understand, it would be a lot more helpful. If there are trouble makers out thee who are at war with the USFS, give them this tome and keep them busy just reading trying to figure out what is being proposed.

Thank you for providing me with this opportunity to comment on the proposed options for preserving the future of Deerfoot Ridge. I'm confident you know much better than I do what the best course of action is and what is the most economic long-term alternative.

Sincerely,

Cecil W. Hathaway

Cecil W. Hathaway

Kootenai Environmental Alliance

#03

Joseph P. Stringer
District Ranger
Coeur d'Alene River Ranger District
2502 East Sherman Avenue
Coeur d'Alene, ID 83814

July 7, 2003

Dear Mr. Stringer:

The following comments are being submitted in response to the Deerfoot Resource Area (RA) E.A.

NEPA/Environmental Impact Statement:
The Deerfoot RA E.A. described the Resource area as being 13,850 acres in size, page 1-1, and on page 1-1 it is also indicated all the streams in the six watersheds feed into Hayden Lake.
The Fernan Ranger District Deerfoot Shamrock EA stated the area was located entirely within the 13,854 acre Hayden Creek drainage. It was also stated that all proposed logging alternatives would be within the Hayden Municipal Watershed Special Forest Zone

The IPNF Forest Supervisor in the Deerfoot Shamrock timber sale Decision Notice, dated March 31, 1982, determined that Alternatives S2 and D5 were the environmentally preferred alternatives for the North Forks and East Forks of Hayden Creek. Under Alternative S2, 810 acres were to be logged and under D5, 571 acres were to be logged, for a total of 1,381 acres to be logged within the analysis area. The total volume estimated to be logged for both Alternatives was approximately 13 MMBF.

The fisheries analysis in the Deerfoot Shamrock EA included the following language. "The fisheries habitat within the area is extremely important for the maintenance of a viable wild cutthroat trout fisheries for Hayden Lake".

The watershed section of the Deerfoot Shamrock EA included an analysis by the Forest Hydrologist of the proposed timber sales that addressed a number of water issues, including channel stability. The Forest Hydrologist indicated that in 1975 a R-1 channel stability evaluation on Hayden Creek produced a rating in the low 90's, which was in the fair range. The following statements are taken from the channel stability analysis. "The same evaluation done in 1981 shows the lower Hayden Creek now rates in the 120's, well into the poor category of channel stability. A review of the 1981 channel stability survey as well as my field observations in August 1981, show the lower channel to have significant bank cutting, bedload movement, debris load and channel widening. I feel this condition arises from both the road-induced sediment as well as in-channel erosion

P.O. Box 1598, Coeur d'Alene, ID 83816-1598 • phone/fax (208) 667-9093
kea@kealliance.org • www.kealliance.org

caused by water yield increases from past cutting. This condition is not likely to heal itself quickly, and could well be compounded by further harvest."

The 1999 IPNF Douglas-fir Beetle Project Final EIS included an analysis of the Hayden Lake watershed. On page III-122 of the FEIS the size of the watershed was listed as approximately 41,400 acres and the watershed was described as being comprised of numerous first, second, and third order streams that drain into Hayden Lake. "The watershed system is considered to be functioning at risk, although it includes some tributaries than may be considered either properly functioning or not properly functioning subwatersheds", page III-122.
On page III-124 of the FEIS the watershed characteristics for the Hayden Lake watershed are described. The watershed is listed as Water Quality Limited, Functioning at Risk, and the subwatersheds used for analysis were: East Fork Hayden Creek, Mokins Creek, Jim Creek, Yellowbanks Creek, and North Fork Hayden Creek.
The FEIS on page III-125 describe the Hayden Lake watershed (Hayden Creek above Lancaster) as also being Water Quality Limited, Functioning at Risk, with the East Fork Hayden Creek and North Fork Hayden Creek subwatersheds used for analysis.

The Deerfoot Ridge project was first described in the Forest Service letter dated March 7, 2002. The project was described as a Ponderosa Pine restoration project. In this letter it was indicated that an Draft Environmental Impact Statement would be prepared.
The second Forest Service letter concerning Deerfoot Ridge and Ponderosa Pine restoration, May 20, 2002, again indicated that an Environmental Impact Statement would be prepared. On page two it was stated the specific activities approved and rationale would be documented in a Record of Decision.

Given the degraded habitat conditions and sediment problems within the Hayden Lake watershed as described in the two previous Forest Service documents, and the sediment problems associated with the planned logging of an additional 1,391 acres with Alternatives 4 or 6, it is clear NEPA requires an Environmental Impact Statement for this proposed project. The watershed analysis found in the previous Forest Service documents confirms that there is credible evidence the logging activities proposed with Alternatives four and six would result in significant environmental impacts to the degraded watershed.
NEPA at 40 CFR 1508.27 "Significantly" as used by NEPA requires consideration of both context and intensity." 40 CFR 1508.27(a) includes the following statement. "Both short-term and long-term effects are relevant." 40 CFR 1508.27(b)(7) contains the following statement. "Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts."
NEPA at 40 CFR 1500.1(a) includes the following language. "Section 102(2) contains "action-forcing" provisions to make sure that federal agencies act according to the spirit and letter of the Act."
NEPA at 40 CFR 1500.1(b) requires accurate scientific analysis, expert agency comments, and high quality information.

The Deerfoot RA EA does not contain accurate scientific analysis, expert agency comments or high quality information that show an Environmental Impact Statement is

not needed for the Deerfoot Resource Area, particularly in light of the previous Forest Service statements that specifically stated an Environmental Impact Statement would be produced for activities proposed in the Deerfoot analysis area.
NEPA at 40 CFR 1500.1(b) requires that environmental information is available to citizens before decisions are made and before actions are taken. The EA does not include any information explaining the reasons why the decision to produce an EIS was dropped, nor are there any documents cited that confirm an EIS in not needed. The lack of information regarding the decision to not produce an EIS does not meet the NEPA requirement cited.

Idaho WQS/Total Maximum Daily Load:
The Idaho DEQ document ""Sub-basin Assessment and Total Maximum Daily Loads of lakes and streams located on or draining to the Rathdrum Prairie" dated October 20, 2000, on page seven indicates that Hayden Lake has designated uses that include domestic water supply. It is also indicated on page seven Hayden Lake is designated as a special resource water.
The Deerfoot RA EA on page 3-56 contains the following language regarding Hayden Lake. "Hayden Lake is currently a listed 303(d) water quality limited segment from the outlet to the inlet of Hayden Creek (IDEQ 2000; PF Doc. AQ-5). The pollutants of concern are phosphorus and sediment."
The EA on page 3-60 includes the following sentence. "Hayden Lake is water quality limited (303d) listed for both nutrients and sediment."

40 CFR 130.2(d) defines water quality standards (WQS) in the following manner. "Provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such water based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act."
40 CFR 130.3 includes the following sentence. "States and EPA adopt WQS to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (CWA)."

Idaho Administrative Code at IDAPA 58.01.02.054.04 contains the following language that pertains to TMDLs. "Until a TMDL or equivalent process is completed for a high priority water quality limited water body, new or increased discharge of pollutants which have caused the water quality limited listing may be allowed if interim changes, such as pollutant trading, or some other approach for the pollutant(s) of concern are implemented and the total load remains constant or decreases within the watershed."

The Deerfoot RA EA on page 2-27 listed the sediment yield increases that would result for each of the Alternatives. Alternatives 4 and 6 both result in sediment yield increases. These increases are as high as 17% with both Alternatives. Every Creek or stream in Alternative 4 has an increase in sediment and every Creek except one under Alternative 6 has an increase in sediment. The increases in sediment with both Alternatives are in violation of IDAPA 58.01.02.054.04

Old Growth:
The Deerfoot Shamrock EA on page 15 contained the following statement regarding old growth. "At least 11 percent of the area's replacement old growth would be left in the drainage regardless of which combination of alternatives are selected for the development of the Deerfoot and Shamrock areas."
The Deerfoot Resource Area EA on page 3-28 indicates that OGMU 21 currently has 247 acres of allocated old growth, and OGMU 24 has 125 acres of old growth. The two OGMUs total 16,994 acres in size and contain a total of 372 acres of allocated old growth, EA at page 3-28. The old growth discussions in chapter three do not use the term "existing" when describing the current acres of old growth in the OGMUs. The terms "allocated" appears to indicate there is a total 372 acres of existing old growth in both OGMUs.

The 372 acres of allocated old growth found in both OGMUs amount to approximately 2.2% allocated old growth across the 16,994 acres. There appears to be 0% replacement old growth in both OGMUs.
There is no discussion or explanation given in the Deerfoot Resources Area EA how the 11% replacement old growth that was to remain in the Deerfoot area as required in the Deerfoot Shamrock EA has now been reduced 0% replacement old growth. NEPA requires expert agency comments and high quality information, 40 CFR 1500.1(b).

The Deerfoot Resource EA also indicated the proposed logging would further reduce old and mature forests, page 3-113. The stand numbers for the stands that have old and mature trees that would be logged with Alternatives 4 or 6 are not disclosed in the EA.

Fisheries:
In the Deerfoot Shamrock DN dated March 31, 1982, the Forest Supervisor stated, "With stream improvements (identified in the EA) and further mitigation (as set below), cutthroat fishery habitat will be protected." The Forest Supervisor also indicated there would be a 13% increase in fish production.
Along with fisheries concerns described in the Deerfoot Shamrock EA, Idaho Fish and Game in a letter to the Fernan Ranger District dated March 31, 1982, also expressed concerns regarding protection of water quality in the drainages that flowed in Hayden Lake. This letter concerned the planned Yellow Stacel timber sale.

The functioning at risk (FAR) status, with some not properly functioning (NPF) subwatersheds in the watershed indicates that beneficial uses are not being fully supported. In the Deerfoot RA EA the fisheries discussion on page 3-74 included the following sentence. "Physical attributes of fish habitat are mainly defined by stream channel condition."
The EA does not supply data regarding the average number of fish per kilometer of stream length that currently exist in each of the Creeks in the analysis area. There is no information displayed regarding population trends for Westslope Cutthroat Trout (wct) in the analysis area over the past 25 years and no data displayed that shows the percent increase, if any, of wct fish populations in the watershed since 1978.

WATSED model:
The discussion of the model in the EA on page 3-59 stated that sediment yield and water runoff modifications were estimated from methods document in the WATBAL Technical User Guide. The Technical User Guide on page 15 contains the following language regarding sediment routing. "WATBAL uses a primitive equation based on a function of the area of the watershed to perform this function. It is recognized that this lack of accurate stream routing and insufficient recognition of stream dynamics is the weakest and as a critical element must be given top priority in future developments."
There is no indication the significant sediment routing weakness noted in the Technical User Guide has been corrected in the WATSED model.

An additional significant weakness of the WATSED model that is not cited in the EA concerns underestimation of sediment production. The Final EIS for the Rock Creek Project, Kootenai National Forest, 2001, included Appendix N. Appendix N concerns sediment mitigation calculations. In the discussion on pages N-9 and N-10 it was indicated the WATSED model underestimated sediment production by 300 percent or more.

The sediment yield increases listed in the EA on pages 3-82 through 3-84 do not accurately account for the sediment routing flaws and the significant underestimation of sediment production that has been found to exist with the use of the model.

The use of the year 1980 for a baseline with the model regarding sediment yield, pages 3-68, 3-69, and 3-70, does not meet the NEPA requirements found at 40 CFR 1502.24, methodology and scientific accuracy. The Clean Water Act defines existing uses as those uses actually attained in a water body on or after November 28, 1975. The use of the year 1980 for a baseline does not accurately portray the actual baseline sediment conditions in the streams and Creeks in the years before 1980. The fisheries analysis in the Deerfoot Shamrock EA described the sediment production in the Hayden drainage as approaching 200 percent of base. This analysis along with the channel stability analysis performed by the IPNF Forest Hydrologist cited earlier clearly show sediment problems existed in the watershed before 1980. The use of the 1980 baseline also does not meet the NEPA requirement for accurate scientific analysis, 40 CFR 1500.1(b).

Cumulative effects:
The Deerfoot RA EA, page 3-12, lists 562 acres of salvage logging in the Resource area that took place between 1990-1999, with another 682 acres of salvage logging that took place in the year 2000.

Additionally, an inspection of the Deersham timber sale map shows there were 19 logging units that are within the Deerfoot analysis area. Of the 19 units, six were clearcut units. The Deerfoot Shamrock EA on page six listed 571 acres to be logged in the Deerfoot area. 22% of the acreage was to be clearcut, 11% of the acreage was to have shelterwood logging, 45% of the acreage was to have intermediate logging, with 4% of the acres having OSR, and the remaining 18% of the acreage being salvage logging. The Deersham sale logged approximately 13 MMBF.

The Deerfoot Resource Area EA, page 3-12, does not list the number of acres of logging associated with the Yellow Stacel timber sale that occurred within the analysis area. The logging associated with this timber sale likely was predominately regeneration logging and not salvage logging. This timber sale logged approximately 8 MMBF.
The classification of 1,244 acres as salvage logging does not appear correct given the amount of regeneration logging that has taken place within the Resource Area, including the two large timber sales cited.

Forest Plan:
Water Standard 2 requires the concentrations of total sediment must be within State standards.
The increases of sediment that would occur in the watershed with Alternatives 4 and 6 would exceed State of Idaho WQS. Alternatives 4 or 6 would not meet Forest Plan Water Standard 2.

The Deerfoot RA EA is not in compliance with NEPA requirements. An Environmental Impact Statement is required to accurately analyze significant environmental impacts to the Hayden Lake watershed from proposed logging activities in the Deerfoot analysis area. NEPA at 40 CFR 1508.27(b)(1) states "A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial".

Sincerely,
Mike Mihelich

Mike Mihelich Forest Watch Coordinator

#04

June 30, 2003

IDAHO DEPARTMENT OF PARKS AND RECREATION

p.o. box 83720
boise, idaho 83720-0065

(208) 334-4199

fax (208) 334-3741

tdd 1-800-377-3529

street address
5657 warm springs avenue

www.idahoparks.org

Kerry Arneson, District NEPA Coordinator
Coeur d' Alene River Ranger District
2502 East Sherman Ave.
Coeur d' Alene, ID 83814

RE: Deerfoot Environmental Assessment

Dear Kerry:

The Idaho Department of Parks and Recreation received the Deerfoot Environmental Assessment (EA). The EA analyzes the affects of a fire reduction project just to the east of Hayden Lake. Project activities include timber harvest, road re/construction, road maintenance, and some road obliteration.

The project area does not contain any developed recreation facilities or trails. The project will have a minimal impact on recreation opportunities within the Coeur d' Alene River Ranger District.

The area is within the immediate view shed of Hayden, Dalton Gardens, and Coeur d' Alene. The EA covered visual impact mitigation extensively. We believe that either of the action alternatives would have an acceptable impact to the majority of the public within the view shed.

We appreciate the opportunity to comment on this EA. If you have any questions about our comments, contact Jeff Cook, Outdoor Recreation Analyst at (208) 334-4180 ext. 230.

Sincerely,

Rick Collignon, Director
Idaho Department of Parks and Recreation

JC g:\wp\nepa\panhandle\deerfoot doc

#05

Phone 509.838.4912 Fax 509.838.5155 Email tlc@landscouncil.org Website www.landscouncil.org

423 W. First Ave., Suite 240
Spokane, WA 99201

July 6, 2003

Sarah Jerome, Project Team Leader
Coeur d'Alene River Ranger District
2502 East Sherman Avenue
Coeur d'Alene, ID 83814
Telephone (208) 664-2318

RE: Deerfoot EA Comments

Dear Ms. Jerome,

These are comments on the Deerfoot Environmental Assessment (EA), on behalf of the Lands Council (TLC), National Forest Protection Alliance (NFPA), Kootenai Environmental Alliance (KEA), the Ecology Center (TECI), Upper Columbia River Sierra Club. Our issues are broken down into sections for easier review of our concerns. Please note that KEA did submit additional comments as well.

In reading the Deerfoot EA, we are very intrigued that our comments we submitted during the scoping process has been incorporated into an action Alternative (Alternative B) with the same amount of analysis as any FS alternative, so we understand. In reading through the EA, it is quite evident that Alternative B is the best suited for this project in terms of economics, ecological health, restoration, road density, wildlife security etc vs. the preferred Alternative 2. Many references allude to that:

> "Alternative 2 would provide the most benefit, this time the most benefit to elk with no additional road construction and disturbance, no short-term reduction in canopy closure, and prescribed fire to improve winter range forage palatability" (EA pg. 3-143)

Table 2-7 that compares the average flame length for each alternative:

			Average Flame Length (feet)			Average Crown Index (mph)		
	Treatment	Acres	2012	2022	2032	2012	2032	2042
Alternative 1	No Treatment	0	2.06	2.84	4.16	34.22	35.84	36.43
Alternative 2	Underburn	548	1.32	2.42	2.82	35.18	37.48	40.12
Alternatives 4, 6	Underburn	269	1.32	2.42	2.82	35.18	37.48	40.12
	Shelterwood	750	4.88	1.68	2.10	96.23	77.95	100.93
	Thin	641	3.13	1.48	1.73	37.33	40.95	42.45

> "Direct effects of Alternative 2 would include an immediate reduction in surface fuels on the 548 acres that would be underburned. Figure 3-FF-10 shows that underburning would reduce flame lengths" (EA pg. 3-45).

Table 2-8. Comparison of effects to aquatic concerns for streams in the Deerfoot Resource Area.

Issue/Indicators	Alternative 2	Alternative 4
WATER YIELD Effects of commercial harvest and resulting canopy openings on % increase in water yield over existing	0% increase in water yield due only minor loss of overstory (1% to 2% mortality) from prescribed burning.	Stump Creek 7% Nilsen Creek 1% Mokins Creek 2% Jim Creek 5% Yellowbanks 3% Hayden Face 6%
PEAK FLOW Effects of commercial harvest and resulting canopy openings on % increases in peak flows over existing	0% increase in peak flow due to only 1% to 2% loss in overstory 2% loss in overstory from prescribed burning	Stump Creek 10% Nilsen Creek 2% Mokins Creek 2% Jim Creek 7% Yellowbanks 5% Hayden Face 7%
SEDIMENT YIELD Effects of commercial harvest and roads resulting in change on % increase sediment yield over existing	0% increase in sediment yield due to no commercial harvest, no new roads, and cool understory burns.	Stump Creek 11% Nilsen Creek 1% Mokins Creek 9% Jim Creek 17% Yellowbanks 13% Hayden Face 2%
REDUCTION IN SEDIMENT RISK By upgrading culverts or removing road fill and culverts at stream crossings (tons/ year)	Stump Creek -5 t/yr Nilsen Creek 0 t/yr Mokins Creek -26 t/yr Jim Creek -18 t/yr Yellow Banks -10 t/yr Hayden Face 0 t/yr Total = – 59 t/yr	Stump Creek -5 Nilsen Creek 0 Mokins Creek -26 Jim Creek -18 Yellowbanks -10 Hayden Face 0 Total = – 59 t/yr
CHANGES IN STREAM MORPHOLOGY AND AQUATIC HABITAT Overall effects to channel morphology and aquatic habitat based on overall changes in water yield, sediment yield, and peak flows (degree of change and chance of measurable effects)	No Change in channel morphology or habitat in fish bearing stream	Potential Change in channel morphology and habitat in fish bearing stream. No chance of measurable changes.

"Alternative 2 proposes no commercial harvest; potential effects to visual quality would be limited to the risk of scorching the canopy during under-burning" (EA pg. 2-29)
vs.
"Alternatives 4 and 6 are the same with regard to harvest treatment units, and in each alternative, portions of proposed units may be seen from key viewpoints. Overall, the harvest will create a change in the appearance of the current landscape" (EA pg. 2-29).

In terms of economic costs to the FS, Alternative 2 would cost the least:
"Total of short-term modeled cash flows: Alternative 2; -$640,000" (EA pg. 2-30 Table 2-14).
vs.
"Total of short-term modeled cash flows: Alternative 4 ; -$1,725,000" (EA pg. 2-30 Table 2-14).

"Alternative 2 is a "burn only" alternative with hand thinning and "cool" underburns. These activities would not cause more than 1-2% overstory mortality, damage soils or remove enough canopy to cause changes in water yield or peak flow" (EA pg. 3-80).

"Alternative 2 would result in the largest net reduction in sediment (by 59 tons), followed by Alternative 4 and 6" (EA pg. 3-86).

"Of the three action alternatives, Alternative 2 would provide the least amount of risk in sediment yields since no temporary roads would be constructed and no harvest would be occurring" (EA pg. 3-89).

Alternative 2 would provide the greatest cumulative benefit in reducing short and long-term sediment yields, since few temporary roads are constructed and it treats the greatest amount of acres" (EA pg. 3-90).

Under Alternative 2, "No direct effects would occur from new road construction or logging activities"
vs.
Under Alternative 4, "new road construction under Alternatives 4 and 6 would cause an irreversible effect to site productivity through compaction and displacement" (EA pg. 3-104).

"Direct and Indirect Effects Under Alternative 2: Based on the proposed treatment, forest structure would remain similar to what would occur under the No-Action Alternative except that understory conifer and brush density would be decreased. A more open understory may increase goshawk ability to capture prey, and taking steps to restore fire as an ecological process in the watershed would likely result in an increase in prey species such as woodpeckers and certain passerines (perching birds and songbirds)"
vs.
"Direct and Indirect Effects Under Alternatives 4 and 6: Commercial thins and shelterwood treatments are proposed over 77 acres of suitable goshawk nesting habitat under these alternatives with an overall decrease of 11% in the Deerfoot Resource Area. The mature age classes would be decreased by 16% in the Stump Creek Foraging Area, by 3% in Two Forks and by 8% in Yellowbanks. The mature age and mid-aged age classes would remain above recommendations in the Stump Creek and Yellowbanks Foraging areas and below recommendations in the Two Forks Foraging area. A known nesting pair occupied the Two Forks foraging area in 2002" (EA pg. 3-120).

Under Direct and Indirect Effects UnderAlternative 2 section for flammulated owl and white-headed woodpecker: "No suitable habitat would be lost as a result of implementing this alternative. The proposed 550 acres of prescribed fire would benefit flammulated owl and white-headed woodpecker habitat by increasing snag availability and by maintaining the open understory found in preferred habitat"
vs.

"Direct and Indirect Effects Under Alternatives 4 and 6: These alternatives would result in a loss of 111 acres of suitable flammulated owl habitat" and "shelterwood prescriptions proposed over 750 acres in the resource area will reduce available habitat and lengthen the time period for any potential habitat to reach suitable and "all shelterwood acres are considered a loss of suitable habitat" (EA pg. 3-134).

"Direct and Indirect Effects Under Alternative 2: Out of a total of 550 acres of prescribed burning, about 200 acres will occur in suitable back-backed nesting or foraging habitat. This treatment is expected to increase snag availability and foraging opportunities for the species. Nesting habitat may also be improved if the
prescribed fire created additional snags for nesting habitat" (EA pg. 3-127)
vs.
"...represents a possible decline in the quality of snag habitat due to removal of portions of the canopy over the short term" (EA pg. 3-127)

"Alternative 2 would not decrease late successional habitat across the resource area, and all current fisher habitat would be retained"
vs.
"Both alternatives 4 and 6 would reduce late successional habitat (fisher) by a total of 425 acres (5%)" (EA pg. 3-132)

"Alternative 2 would retain all pileated woodpecker habitat in the Deerfoot Resource Area. There would likely be additional snags created under this alternative due to prescribed fire even with measures to protect leave trees. Most larger diameter ponderosa pine would survive the fire....Snags and scorched trees resulting from prescribed burns will provide additional nesting and foraging habitat. This alternative would also provide more mature habitat over the short term than alternatives 4 and 6, and would not result in decreased habitat quality due to road construction or reconstruction" (EA pg. 3-139)
vs.
"Although these prescriptions do not all occur in suitable pileated habitat, they would decrease late successional habitat. Even if all large diameter seral trees and all snags are left, decreases in canopy closure as a result of removing understory and non-seral species will not maintain preferred habitat over the short term" (EA pg. 3-139)

As indicated above with these examples, Alternative 2 has the least amount of impact on soils, wildlife, wildfire risk, sediment risk, road construction and reconstruction than the FS's preferred Alternative 4. All these factors are contributing to cumulative impacts (past, present and future) to an ecosystem (project area in this case) that has been managed intensely for the past forty years. It is clear that the decision to log this area has already been made and has been tiered to the purpose and need of the project. It is very clear that the "analysis" has been written merely to justify the imminent decision rather than to disclose environmental effects.

Soils:

The EA fails to conduct a full "hard-on the ground-look" prior to the completion of this EA. The EA depends too much on timber stand inventory, soil maps, road data bases and aerial photos.
Where were the "On the ground reviews" conducted within past harvest areas?
What is the compaction percent of all the logged areas from the 1960s, 1970's, 1980's and 1990's?
Does that figure meet FSM guidelines and IPNF Forest Plan Standards?
And will soil compaction from heavy machinery for yarding further compact existing conditions? And by how much?
What are the mitigation measures that are designed to meet these guidelines?

Failure To Adequately Consider Impacts to Soil Resources
The soil resource is extremely important, that by law, regulation, and Forest Plan the District must protect the productivity of the soils. We are very concerned about inconsistencies in the analysis in the EA.

The District still seems confused about how to conduct a proper soil analysis. We refer the District, and the Appeal Deciding Officer to the recent court case; Kettle Range Conservation Group vs. US Forest Service, No. CS-00-0031-JLQ, July 2001, in which Judge Quackenbush found that the Forest Service "did not take the time to walk the areas that they planned to harvest." But instead the Forest Service estimated the condition of each unit. How was your "on the ground reviews" done (EA pg. 3-98)?

The Douglas Fir Beetle case is pertinent to this timber sale. We contend that the analysis of the EA project failed to look comprehensively at the existing condition of the proposed units, especially reflecting back on past activities. The EA indicates that the project area has been logged before, presumably leaving detrimental soil conditions and possibly decreased soil productivity.

We also note that the roads, skid trails and helicopter landings that lace the area are not to be included in the analysis. The failure to disclose this information about the site-specific condition of the soils violates the Idaho Panhandle Forest Plan. Alternative 4 proposed 5 helicopter landings which is equivalent to 5 acres of irretrievable impacts. This is quite contrary to the EA's claim that helicopter logging systems have no detrimental effects to soils.

Application of Forest Plan Standards for soils protections requires direct, on-the-ground surveys in areas affected by previous management activities in order to provide numerical percentages of existing detrimentally disturbed Activity Areas. Without taking this step, decisions resulting in any soil impacts will be made lacking the cumulative effects analysis that NEPA requires.

In the soils environmental consequences section on pg. 3-101, the anticipated effects of the project on soils are discussed. However, no other current or future projects are discussed, making the EA's soil analysis fall far short of that required by NEPA, even though pre-commercial thinning and commercial thinning are anticipated in future management (EA pg. 2-11). Also, no private activities in the watershed are discussed, a major and serious omission. These activities fall under NEPA's language of reasonably foreseeable future actions.

The National Forest Management Act and its implementing regulations include mandates for soil protection. NFMA at 16 U.S.C. 1604 (g) (3) (E) requires the Forest Service to "ensure that timber will be harvested from National Forest System lands only where-soil, slope, or other watershed conditions will not be irreversibly damaged." The implementing regulations at 36 C.F.R, ß 219.27(a)(1) state, "All management prescriptions shall Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land."

The Forest Service made a similar error in another project analysis, the Dry Fork Vegetation Restoration Project, Kings Hill Ranger District, Lewis and Clark National Forest. In his September 6, 2000 recommendation to the Appeal Deciding Officer, Appeal Reviewing Officer Doug Gelvenic stated:

> I find that the EA and DN do not adequately address impacts to soil resources as required in FSM 2500, "Watershed and Air Management, R-1 Supplement 2500-00-1, Effective 11/12/1999." I recommend the Forest Supervisor's decision on the Vegetation Alternative 5-Modified be reversed.

The Appeal Deciding Officer subsequently reversed that decision on those grounds.

The government has a duty to use high quality information and accurate scientific analysis. Allowing the Forest Service to rely on expert opinion without hard data violates NEPA that calls for the best available data and science.

The Regional Soil Quality standards that were revised in November 1999 and included in the Forest Plan specifies the 85 % of an activity area (cutting unit) "***must have***"soil that is in satisfactory condition. This

will not be met when 3,616 acres that have been previously logged over the past thirty to forty years will also be logged again under the Deerfoot Timber Sale.

On-site review found that six proposed treatment units (5b, 5c, 8b, 8c, 21c and 28d; totaling 80.9 acres) have an average 20.2% soil disturbance from harvest treatments carried out before 1990 (EA pg. 3-100), four units (4b, 7c, 13b and 29b, totaling 25.8 acres) prescribed for slashing and underburning only on which previous treatments have occurred, have an average soil disturbance of 29% (EA pg. 3-100), and four proposed harvest areas (35 acres total) that have had tractor yarding in the past, and which have an average predicted detrimental effect of 21% (EA pg. 3-105). Those units currently violate this standard and will not maintain current conditions, or future conditions.

The EA claims that the "proposed yarding would be confined to existing harvest trails and corridors, the disturbance level would not increase in these units" is not taking into account the tree yarding that would create soil disturbance when is it being dragged across the ground and "tractor yarding have the most detrimental impacts to soil" (EA pg. 99) In comparing two different tractor logging methods, they have different impacts (EA pg. 3-102):

With spring burning or grapple piling 13 percent (>25 percent soil moisture)
With fall burning, no grapple piling 15 percent (>25 percent soil moisture)

Which method will be used? How will the percentages differ in calculating soil disturbances?

Cumulative effects framework:

NEPA and the Forest Service Handbook work together to require that the Forest Service disclose and consider the cumulative impacts of past, present, and future actions in an EIS. NEPA at § 1508.25 makes this clear,

> *agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:*
>
> *(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.*

The Forest Service Handbook describes a cumulative impact as,

> *Cumulative Impact.*
> *...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7)*

Non-Compliance

The Deerfoot EA has failed to adequately disclose and consider the cumulative impacts on numerous issues such as impacts to soils, elk habitat, wildlife, road construction and reconstruction, fuels build up within the analysis area. The FSH requires that the cumulative effects analysis describe the impact that the Deerfoot project will have on the environment when added to other past, present, and reasonably foreseeable actions.

For past logging activities, the EA acknowledges that many proposed units "have had multiple entries, it is not possible to track in the current database if the same acres were harvested on the re-entries because stands are often larger than recorded activity acres" "activity acres of all harvest since about 1960 without consideration of multiple entries to the same stand" (EA pg. 3-12). This is a huge void when doing any soil impacts analysis.

Soils:

With so many past projects and concurrent projects occurring within the Deerfoot EA, further impact on soils compaction is inevitable. Many of the proposed units have been treated (clear-cut or salvaged) over the past forty years and seven projects are currently occurring within the cumulative effects analysis area

(Table 2-3). Table 3-VEG-1 shows the number of logged acres in the Deerfoot Resource Area from 1960 to Present (based on TSMRS activity) :

1960-1969	1,638
1970-1979	141
1980-1989	102
1990-1999	1,021
2000-2010	714
Total	3,616

The percentage of the 13,850-acre Deerfoot Resource Area over the past 40 years and from 2000 on (concurrent) is 26% and 5% respectively.

Refer to *Failure To Adequately Consider Impacts to Soil Resources* section above for cumulative effects review.

Rocky Mountain Elk:
In analyzing for Elk Habitat Effectiveness, the EA identifies both the Forest Plan Standard and the Idaho Department of Fish and Game (IDFG) Guidelines for Evaluating and Managing Summer Elk Habitat in Northern Idaho (IDFG 1984; PF Doc. WL-R74) to evaluate elk habitat potential. Any level below the 50% as recommended by IDFG, and adopted by IPNF Forest Plan, in the Guidelines for Evaluating and Managing Summer Elk Habitat in North Idaho, during the implementation of the project violates the fact that a minimum value of 50% or greater for general elk summer range, even during project implementation.

Elk Habitat Unit 10: The current elk habitat potential for EHU 10 is 45%. Compartment 308 is the only compartment in the EHU that falls within the Deerfoot Resource Area. This compartment has an elk habitat potential of 34, with a 34% minimum for the compartment (EA pg. 142).

Elk Habitat Unit 9: The current elk habitat potential for EHU 9 is 42%, this falls short of the 50% that was adopted by the IPNF. Compartment 309 falls entirely within the Deerfoot Resource Area, and covers all of the area except about 700 acres. The other compartments reported within EHU 9 fall outside of the resource area. Compartment 309 has a current EHU potential of 38%, with a 38% minimum for the compartment (EA pg. 142).

A portion of the salvage harvest activities recently completed under the Douglas-fir Beetle Project was located within Elk Habitat Units 9 and 10. However, post-sale activities (such as site-preparation burning and planting) are not completed yet. Because of this, some level of activity will continue to occur within the Deerfoot Resource Area over the next 2-5 years as a result of these activities. This represents the existing condition, and does not include the effects of activities under the Deerfoot proposal nor is it included in the cumulative effects analysis, violating NEPA and FSH (EA pg. 3-143).

The construction and subsequent use of roads are the most important disturbance factors used to calculate EHE. "Degree of disturbance is related to amount of traffic, season of traffic, type of traffic and amount of buffer available to separate the disturbance"(Leege, 1984, p.9). Currently there are approximately 51.65 miles of classified (system) roads located in the Deerfoot Resource Area. Approximately 22.13 miles of these roads are open at this time. There are also approximately 44.61 miles of unclassified (non-system) roads within the project area. the current average density of existing roads, for the resource area as a whole (9259.18 acres), is approximately 6.75 miles per square mile. About 2.13 miles of road have been decommissioned (EA pg. H-3).

To add to the high motorized use in the Coeur d'Alene area, closed roads with barriers such as gates, berms and vegetation have been proven ineffective. During the FY 2001, 285 citations were issued, which was an increase of 121 citations over 164 issued in FY 2000 (USDA 2001). This is attributable to the increase of motorized use and "increase of road closures on the IPNF" (USDA 2001). The EA even realizes the problem in the Deerfoot Resource Area, "barrier that has been removed or breached in some way.

Motorized use can be high on some of these breached closures. The percentage of closed roads on the District that are experiencing regular unauthorized use is high" (EA pg. 3-148).

The EA states "If the roads that are officially closed, but have no barrier or sign and the roads that are closed, but have some type of breached physical barrier are added to these numbers, road density on the District would be greater than 0.5 miles per square mile" (EA pg. 3-148). So why are they not incorporated into the miles per square mile calculation?

The EA states that "All breached barriers and ineffective road closures were accounted for in the elk habitat potential model" (3-148), but how and in what capacity? Also, were pioneered trails taken into account in the elk habitat potential model?

Deerfoot proposal will substantially decrease elk winter habitat for the foreseeable future, "the openings created by shelterwood prescriptions under this alternative would decrease cover over the short term" and "the proposed commercial thins will also decrease existing cover" (EA pg. 3-145).

The Iron Honey project area that has many large clear-cuts planned, several over 300 acres in size, falls within the EHU 10, as does a few within the resource area, near Stump
Creek. The EA admits that "activities on this scale will result in disturbance to big game during project activities" (EA pg. 144) and the Iron Honey FEIS admits that elk will be displaced to other EHUs outside the project area.

The EA illegally relies on a future District Travel Plan that has not been finalized yet, "The Transportation System for Alternatives 1, 2, 4, and 6 would be consistent with the reasonably foreseeable Coeur d'Alene River Ranger District Travel Plan" (EA pg. H-3).

Rather than conduct an analysis as described above by the Forest Service Handbook (FSH), the Deerfoot EA uses the cumulative effects analysis to dismiss all negative impacts of the preferred alternative .

As noted time and time again in the EA, Alternative 2 would provide the most benefit, this time the most benefit to elk with no additional road construction and disturbance, no short-term reduction in canopy closure, and prescribed fire to improve winter range forage palatability.

Fire/Forest Health/Historic Range of Variability (HRV)/Vegetation:

Most of the EA is based upon a flimsy premise that the forest needs massive and extensive human intervention to make it healthy again. However, the EA and associated documents are not precise in how to define forest health. Is it merely an expression of being within historical range of variability (HRV) or does it include human economic concerns as well? If the latter, how can science define what is healthy since the economic values are simply that, expressions of a value system, and not based in value-neutral science? (see Walder 1995)

It becomes very difficult to subscribe to the EA arguments when the definitions are not precise. For example, we were unable to find a definition of "historical range of variability" in the EA. Charts in the EA routinely compare "historic" conditions to "current" conditions (e.g. Table 3-4). What is "historic"? Is it a hundred years ago, or a thousand years ago? There is a huge difference. How did you get the data?

For this discussion, let us use, then, a modern definition of range of variability as found in the new NFMA regulations. The definition may be instructive to the writers of the EA. Range of variability is defined here at Sec. 219.36 as:

> "The expected range of variation in ecosystem composition, and structure that would be expected under natural disturbance regimes in the current climatic period. These regimes include the type, frequency, severity, and magnitude of disturbance in the absence of fire suppression and extensive commodity extraction."

Current climatic period is further defined as:

> "The period of time since establishment of the modern major vegetation types, which typically encompass the late Holocene Epoch including the present, including likely climatic conditions within the planning period. The climatic period is typically centuries to millennia in length, a period of time that is long enough to encompass the variability that species and ecosystems have experienced." (Id.)

To paraphrase the definition, for a project to claim that an area is outside of the range of variability, according to the current NFMA definition, it would need to make the case that the area has not seen current conditions in a length of time encompassing the late Holocene Epoch- a period of centuries to millennia in length. The EA utterly fails to make the case that the current vegetative condition failed to exist at any time within the late Holocene Epoch. Have you considered the NFMA definition of range of variability? How can you claim to know that the forest is outside of HRV when you did not use these criteria?

What range of time is being used to determine HRV and is it long enough to be accurate? What proof is there to refute scientific findings that these historic condition were only a few frames and not representative of an ecology perspective that should be from two to three thousand years in length (see Walder 1995 and Johnson et. al 1994)?

The Idaho Panhandle National Forests' apparent definition of HRV is very narrow and without justification. This is particularly true in light of two facts. First, the moist North Idaho forests are not well understood in terms of fire frequency and history (see Johnson et al. 1994). Second, these forest are admittedly moist as the EA notes (35 inches annually). No true dry site types can exist is such areas. Rather, the expression of drier type vegetation is the result of slope, aspect and other environmental factors. The site potential for these areas is far different than true dry site pine types like those on the Mogollon Rim in AZ and NM. , At best, these areas are vegetative inclusions, not true sites in and of themselves and the EA admits as much.

In any case, what evidence refutes scientific research that stand-replacing fires occurred in ponderosa pine types (Arno et al. 1995)? What evidence is there that refutes the role of climate in changes in ponderosa pine types and the science that shows ponderosa pine types may not always exhibit equilibrium (as the purveyors of the steady-state, park-like stands would have use believe)? (Arno et al. 1995, Shinneman and. Baker 1997, Veblen et al. 2000)

The only possible explanation for the agency's view of fire history is that lightning struck so precisely as to burn the minute and isolated open stands of ponderosa pine every 7 to 15 years, but not burn adjacent areas seems quite absurd. Second, the Forest Service has been known to mislead the public about historic stand conditions of ponderosa pine in the Northern Rockies and those errors, whether inadvertent or purposeful, were exposed by Keith Hammer (2000). The Forest Service erroneously used post-logging photos as indicative of pre-settlement, open conditions.

The EA uses an early 20th century photo of Rathdrum Prairie to show case the virgin timber and open ponderosa pine forest (EA Figure 1-4) as a reference to create this similar landscape on north and west facing slopes that are 4,000 feet in elevation (EA pg. 2-3). The Rathdrum Prairie is on the other side (west side of Hayden Lake) and at 2,200 feet in elevation. The vegetation is quite different.

Throughout the EA, the Forest Service talks about stand replacing fire as if they were unnatural. This is despite the fact that the DEIS acknowledges that "stand-replacing" fires did naturally occur, before the era of fire suppression In fact, moist forest types are dominated by stand-replacing fires. What evidence is there that refutes the plethora of agency studies, including the agency's own fire categories, that stand-replacement fire is normal for these moist forest types? Why is there so little discussion of the beneficial role of stand-replacing fire? What scientific evidence refutes the findings in Ament (1997) where he quotes from Hutto (1995), that, "the origin of most Rocky Mountain forest stands can be traced to stand-replacement fires" especially in these moist forests that contain cedar and hemlock?

The analysis is terribly illogical in its treatment of larch. Larch are intolerant (do better in the sun). Stand-replacing fires favor larch as they do better in open sites yet the EA tries to avoid these types of fires while at the same time trying to encourage larch. This sophistry is merely an excuse to log as that is the agency's solution to all ills, so-called forest health and child neglect included.

Many timber sales in the past few years in the interior West have claimed a need to return conditions to a "pre-settlement" status and "open park-like" stands. We question the authenticity of this model and cite two references that seem to refute the idea that our forests were far more open. The John Lieberg reports, 1897-9, part of the US Geological Surveys of the 1890s indicate stand densities, species by type and size, and contain photographs and descriptions of forest reserves in North Idaho, including the Priest River, Bitterroot and Coeur d'Alene areas They clearly show high stem densities, many snags and burnt areas and few open stands. For low land moist, dry end forest sites in the area he noted that "douglas fir sometimes replaces the yellow pine to the extent of 75 to 80 percent" and the "forest growth dense" (Leiberg, 1897, p. 58). He also noted that in places where there is a greater mix of diameter trees, there is also a greater increase in number, "thus, an estimate of 1,000-1,200 to the acre (6 inches) and upward in diameter, would not be at all excessive" (Leiberg, 1897, p. 58-59).

Leiberg documented similar tree densities in the Priest Lake area for the yellow pine zone,"the forest growth is dense...ranging from 800 to 1,500 trees to the acre, but where such density exists the diameters of the individual tree are small" (Leiberg, 1897-98, p. 227). The yellow pine occupies a lower position than the white pine, which lies between altitudes of 2,400 and 4,800 feet (Leiberg, 1897-98, p.223).

The Skovlin and Thomas report, Interpreting Long-Term Trends in Blue Mountain Ecosystems from Repeat Photography, Pacific Northwest Research Station PNW GTR-315, June 1995, shows many photos from 60-80 years ago with stands that are very dense, as well as many stands that appear to be recently burned. In the case of both the USGS John Lieberg reports and the Blue Mountain report there is little evidence of the widely spaced forest that current Forest Service timber sales are trying to attain. We believe the bias toward logging has unduly influenced forest management and that an honest appraisal of stand succession, historic processes and desired future condition must be made.

What evidence is there that these forests are like those in the Southwest? In other words, climax forests where in absence of fire, ponderosa pine comes in the understory versus a fire disclimax where, in the absence of fire, other species are found in the understory. Isn't the approach to those different ecological types different? Why is the agency using a model that may better fit the Southwest for so-called ponderosa pine stands in the Northern Rockies?

The above point is crucial. The current vegetation is an expression of what grows best on the sites. Extensive past logging in this area proves that intolerant species are not less competitive because of a lack of sun because there is plenty in the clear-cuts (which had a lot of slash burning on them). If the premises in the EA were correct--that logging is needed to favor intolerant seral species--then intolerant species should already dominate in the analysis area. Thus, the only logical conclusion is fire suppression is not to blame for the decline in intolerant species (because there has been a lot of burning after clear-cutting and the agency maintains in this document and elsewhere that clear-cut logging and burning are necessary to regenerate intolerant species

Furthermore, the actual decline in intolerant species may not be that great, if the charts in the EA are to be believed. That would support the suspicions of conservationists that the agency is making up crises as a justification for logging. Additionally, it may well be the agency's claim that logging mimics fire--the rationale for all the alternatives except two (Alternative 1 and 2)--is wrong. In that case, this whole EA needs to be reconsidered.

One of the most important factors in looking at HRV in this region involves climate. Has the agency considered evidence that forest conditions are more reflective of climate change than fire suppression? What about the fact that the 1910 fire burned in supposedly open-park like stands with a vengeance? What about the paleoecological research that shows the importance of climate change in governing vegetation (Webb and Bartlein 1992).

Simply put, changes in climate, which may change fire frequency, make changes in soil and vegetation types. The EA omits climatic change as a reason for current forest composition in the face of evidence we are undergoing rapid and unprecedented global climate change. That flaw is serious.

Vegetation changes seem to lag behind climate change (Johnson et al. 1994). When looking at the real picture, and not some narrow, snapshot-in-time view, one conclusion becomes evident, "scientists still do not know what, if any, fire frequency is normal within an evolutionary time scale." (Walder 1995).

Given climate change and the very real possibility that site potential for various types have changed (soil pH and chemistry, moisture, soil temperature) because of it, the view of HRV on anything less than an evolutionary time scale is inadequate. That is especially true given the above mentioned dramatic and scientifically documented increases in global temperature over the past few years. The past decade was the warmest on record.

Furthermore, Tiedemann et. al. (2000) challenge the claim to understand the concept of "historic range of conditions" and seriously calls into question the whole notion that we can, or even should, try to replicate such conditions by stating:

> Nearly 100 years of fire exclusion, possible climate changes, and past management practices may have caused these communities to cross thresholds and to reside now in different steady states.

Even if we do accept the agency's dubious theory of HRV, we must ask whether thinning is really necessary. Hessburg and Lehmkuhl (1999) question the common assumption in the EA that fuel levels are too high for prescribed burning to take place before thinning. Their review also stresses the importance of larger level spatial and temporal issues generally not well disclosed or understood in limited treatment proposals.

The EA does not provide any evidence these grand experiments will succeed or that logging and thinning replicate natural fires. In fact, there is considerable scientific evidence to the contrary (see Rieman and Clayton 1999 and Pacific Biodiversity Project 2000).

Thus, the discussion of HRV and forest health in the EA and supporting documents is not supported by logic or the best science. The steady-state theory of ecology is inappropriate for time scales more than 200 years in length. (Webb and Bartlein 1992) Certainly, the goal is to have national forests in perpetuity. A time frame of 200 years only takes us back to Lewis and Clark, a time not so distant when the St. Joe National Forest was considered part of the public domain of the USA by the federal government just as it is today.

The EA acts as if the vegetation across the entire area has been altered by fire suppression and then proposes logging and thinning as the solution. Yet, the past logging, which was very extensive, does not affect the EA analysis. In other words, the EA is inconsistent, it says on one hand that logging and thinning will reduce fire severity but that the extensive logging in the past, which also included slash burning and many clear-cuts, does not affect the current fire regime or the increased risk of fire. The whole premise in the EA is based upon this idiocy. In actuality the present condition in the Deerfoot project area is a result of 3,600 acres of clear-cuts since 1960, road building, fire suppression and increased brush/saplings/fine fuels and exposure to weather elements. The additional overstory removal from 1,400 acres would permit shrubs to develop a dense, long-persisting layer that competes with establishing tree seedlings (Cooper, Neiman and Roberts, 1991; PF Doc. VEG-R4) and replanting would add to fire risk as well.

The effects discussions are biased. They fail to discuss the beneficial impacts and natural role of natural fire. They also fail to analyze the negative impacts of unnatural spring burning fails to adequately analyze the direct, indirect, and cumulative impacts of the project on vegetative cover and fire regimes.

While the FireSmart Kootenai County program is accomplishing fuels reduction work in the home ignition zone, the EA claims that this project would "focus on lands that are outside of the home ignition zone, but

in relatively close proximity to communities" (EA pg. 1-6). How close is close? Various Ranger Districts have adopted different community protection zones or Wildland Urban Interface Zones. We recommend that all the districts on the IPNF adopt the US Forest Service's own fire ecology and science by Jack Cohen. Landscape treatment a way from communities is irresponsible to the communities at risk.

Interestingly, a recent report was just released by the Rocky Mountain Research Station USDA Forest Service in Fort Collins, Colorado. The Hayman Fire Case Study Analysis preliminary findings show (which has been included for your review):

- extreme environmental conditions (winds, weather, and fuel moisture)and the large size of the Hayman Fire that developed on June 9 overwhelmed most fuel treatment effects in areas burned by the heading fire that day. This includes all treatment methods including prescribed burning and thinning
- fuel treatments are expected to change fire behavior but not necessarily stop fires.
- Fire behavior was modified but not stopped by stand thinning operations conducted at Manitou Experimental Forest
  No fuel treatments were encountered when the fire was small. The fire had time and space to become broad and generate a large convection column before encountering most treatment units
- Few fuel treatments had been performed recently, leaving most of the landscape within the final fire perimeter with no treatment or only older treatments. This is significant because the high degree of continuity in age and patch structure of fuels and vegetation facilitates development of large fires that, in turn, limits the effectiveness of isolated treatment units.
- Areas of high severity burn are likely to have the greatest alterations in soil characteristics, including loss of surface soil organic matter and fire-induced synthetic water repellency.
- Vegetation that is different from pre-fire conditions, but within the historical range of variability, is likely to develop in ponderosa pine and Douglas-fir forests where the fire burned with moderate severity, and also in small patches of high-severity burn.
- Research has shown that the characteristics of the home in relation to its immediate surroundings (within 30-60 meters)principally determine home ignitions during intense wildland fires. The wildland fire intensity in the general area does not necessarily cause home destruction or survival. This distinguishes the difference between the exposures (flames and firebrands)produced by the surrounding wildland fire from the actual potential for home destruction (home ignition zone)given those exposures. Recognizing that the home ignition zone principally determines home ignition potential provides an important context for interpreting the home destruction information. The home ignition zone implies that the issue of home destruction can be considered in a home site-specific context rather than in the general context of the Hayman Fire.

Why is there a singular reference to fuel break construction in Table G-TES-1 of the EA? What does this refer to and what does it mean? Does the proposed action call for fuel break construction? If so, it needs to be fully disclosed.

The EA fails to establish a dbh size limit on trees to be logged. The casual language only offers a false sense of retaining any sizable trees, "ponderosa pine and western larch of all sizes would be favored to remain on site; those 18 inches or greater in diameter would receive special emphasis to remain on site" (EA pg. 1-6). Also, the FS can use their own discretion by being allowed to select ponderosa pine or western larch for removal when they occur in a very dense stand that cannot be safely underburned without thinning.(EA pg. 2-13). We recommend the IPNF to implement the east side screens as recommended by ICBMP which puts a 21" dbh tree size limit for the Deerfoot Project.

Wildlife:

Management Indicator Species (MIS)

The IPNF Forest Plan adopts the pine marten, pileated woodpecker, and northern goshawk as management indicator species (MIS) for old growth, in accordance with NFMA implementing regulations at 36 CFR §

219.19(a)(1). The Forest Plan also adopts several Standards to assure viability of old growth dependent species across the Forest, as directed by NFMA's diversity requirements.

Many MIS and Sensitive species need habitat associated with old growth forests. These habitat characteristics include large dead trees; large live trees with defect or signs of decadences such as heart rot and decay, large contiguous areas with high canopy closure, and large pieces of down wood on the forest floor. Just as important, mature non-old growth and near old growth forest areas also provide many of these important habitat characteristics used by these species. In short, these species need forest habitat that is largely unaltered by human activities such as clear-cutting, salvage logging, prescribed burning, firewood cutting, and road building.

The IPNF's failure to incorporate scientific findings for snag guidelines, to monitor MIS and to meet Forest Service old growth and snag guidelines are violations of the Forest Plan, NFMA, and NEPA.

Forest Plan Standard 7a requires the IPNF to "Maintain at least minimum viable populations of management indicator species distributed throughout the Forest" (emphasis added). IPNF Forest Plan old growth Standards 10(c) and 10(f) concern distribution of old growth habitat, addressing both Forest Plan and NFMA regulation requirements that address diversity, defined as "The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan" (36 CFR § 219.3, emphasis added).

The Forest Plan states that monitoring and evaluation will provide the decision-maker and the public with information on the progress and results of implementing the Forest Plan. The importance of old growth and snags for wildlife species is reflected in the Forest Plan's adoption of the pileated woodpecker as a management indicator species (MIS) for old growth and cavity nesting habitat, and the northern goshawk and pine marten as MIS for old growth habitat. Additionally, the Forest Plan recognizes that snags and large pieces of down wood in various stages of decay are essential components of old growth habitat. The IPNF will not employ the most current, relevant science and has failed to monitor these MIS and their habitat. Alternative 4 in the Deerfoot project would continue the Forest Service-facilitated degradation of habitat for species depending upon old growth, live and dead trees providing opportunities for cavity nesting, and large pieces of downed wood on or near the forest floor, " more habitat existed for pileated woodpeckers historically" and "large diameter snags are in short supply and canopy closure in many stands is less than optimal for pileated woodpeckers." (EA pg. 3-138). Furthermore, "Alternative 4 would decrease the suitable habitat by 375 acres, when "no historic population information is available for pileated woodpeckers" (EA pg. 3-137). To compound the cumulative impacts, the nearby Iron Honey Restoration Project FEIS also acknowledges that snags, and large diameter overstory trees are in short supply(p. III-161).

The IPNF's Forest Plan was approved on September 17, 1987. In attempting to fulfill NFMA's monitoring and reporting requirements, the Plan required the Forest Service to monitor several items on an ongoing, annual, biannual, or five-year basis and to report on the results of the monitoring at annual, biannual or five-year periods. Thus the Plan embodies NFMA's two monitoring obligations: (1) to conduct monitoring, (2) to evaluate and report to the public the results of that monitoring. The FEIS fails to disclose population trends of its old growth MIS—including pine marten, pileated woodpecker, and the northern goshawk. Forest Plan Monitoring item F-1 requires the annual monitoring of "Population trends of indicator species" and this monitoring information is to be reported every 5 years. Additionally, "Downward population trends" are the "threshold to initiate further action." The Ecology Center January 25, 2000 letter to the Forest Supervisor identified several monitoring items for which Forest Plan monitoring was not done, or was performed inadequately. Consider this letter from the Ecology Center as part of our EA comments. Those include old growth management indicator species. The IPNF, in a letter dated May 20, 1999, stated that no population trend data is available for the pileated woodpecker and the northern goshawk[1]. Despite

---

[1] A copy of this document was supplied to the Appeal Deciding Officer with the appeal of the Douglas-fir Beetle ROD, IPNF, in 1999.

the selection of these two species as forestwide MIS and the Forest Plan's monitoring requirements, the IPNF has, in approximately 12 years of implementation of the Forest Plan, failed to monitor population trends, as the Forest Plan requires.

Old Growth MIS:

Pine Marten

Pine marten inhabit late successional coniferous forests, preferring old-growth fir or spruce-fir stands (Koehler and Hornocker 1977,Spencer 1981) and are used by the Idaho Panhandle National Forests as management indicators of these habitats (IPNF Forest Plan 1987). They are present in the Iron Honey Analysis Area. An important component for marten is dead trees including snags, stumps, and down logs. Marten prefer stands with greater than 30 percent canopy closure and are usually within close proximity to cover. Alternative 8 would remove 70% of the canopy, leaving the bare minimum for pine marten needs which would be in jeopardy anyway due to increase exposure to wind. They prefer spruce-sub alpine fir stands with large overstory trees (greater than 19 inches in diameter), and many down logs (more than 20 per acre)(Warren 1989). However "overall" pine marten habitat does not occur in the Deerfoot Resource Area (EA pg. 3-140). What does "overall" mean?

It is recommended that suitable habitat for individual pine martens be distributed geographically in a manner that allows for interchange of individuals between habitat patches (Warren, 1990), but the EA fails to identify this corridor and fails to take guidelines for Moderate Quality Sub-drainages into account as outlined in the Forest Carnivore HCA/S (Idaho Dept of Fish and Game, 1995). The guideline calls for 60% of the preferred and suitable habitat as late-successional forest be interconnected by travel corridors comprised of closed-canopy forest (i.e. > 40%) and patches should be a minimum of 80 acres with 50% of their perimeter adjacent to forested sites (p. 55).

The Deerfoot EA violates NFMA regulation 36 CFR § 219.19, which requires habitat to be well distributed across a planning area (national forest) at:

> Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one, which has the estimated numbers, and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.

Pine marten depend upon continuous, intact late successional forests that provide canopy cover for traveling corridors, foraging and nesting.

Throughout the EA's discussion on old growth, the Forest Service claims that post sale old growth recruitment would occur within the next 150 years, and therefor would trend toward optimal marten and pileated woodpecker habitat. But according to Thompson and Harestad's review and research on the effects of logging on martens and a proposed model of stand development and carrying capacity, late successional forest recruitment is still not beneficial to the marten (Thompson and Harestad 1994). Adverse effects of logging, through the loss of habitat, are categorized as either short-term or long-term. Over the short-term, studies reviewed show that martens avoid recent clear-cuts. Over the longer term, forests may become too fragmented on the landscape scale to provide suitable habitat, and if logged mixed-wood forests regenerate to deciduous forests, they provide insufficient prey and unsuitable habitat during winter.

Pileated Woodpecker

Under Alternative 4 Stands treated with shelterwood prescriptions would not provide suitable habitat for pileated woodpeckers again for 150 years (EA pg. 3-139). In fact Alternative 4's 750 acres of shelterwood prescription would only leave 2-30 trees/acre and about 20-30% canopy (EA pg. 3-20). How much canopy cover would be left after 641 acres are clear-cut via commercial thinning? Nine units would be greater than 40 acres in size, ranging between 56-212 acres. Pileated woodpeckers nest in mature to old-growth stands of about 50 to 100 acres that are found within their home ranges, with relatively closed canopies (greater

than 65% closed) and large (greater than 20 inch diameter) trees (Bull 1980, PF Doc. WL-R64; McClelland 1977 and 1979; PF Doc. WL-R65 and R66). The northern goshawk prefer to nest in mature to over-mature coniferous forests with large trees, and canopy coverage of 60 to 80% (Hayward 1983, PF Doc. WL-R10; Saunders 1982, PF Doc. WL-R11). How will canopy cover to provide nesting, fledging and foraging habitat be meet under the Alternative 4?

Forest Service policy (FSM 2470.3) (USDA, 1990) (VEG-R1) and Regional Guide (USDA, 1983) (VEG-R2) directs land managers to:

> 6. The size of tree openings created by even aged silvicultural methods will normally be 40 acres or less. With some exceptions, creation of larger openings will require 60-day public review and Regional Forester approval.

The Forest Supervisor needs to review and sign off on any project that proposes logging units greater than 40 acres. Has the team leader or district ranger received written approval yet? And will these 9 units ranging from 53-212 acres be open to the 60-day public review?

The preferred action alternative would not be consistent with National Forest Management Act (NFMA) requirements for population viability as there "no historic population information available for pileated woodpeckers" (EA pg. 3-137) and a total of 300 acres of shelterwood prescriptions and 375 acres of thinning in mature age classes are proposed" Alternative 4 and "would decrease late successional habitat" (EA pg. 3-139). NFMA 36 CFR 219.19 (a)(6) states that "Population trends of the management indicator species will be monitored and relationships to habitat changes determined" and 36 CFR 219.19 (a)(2) states that "Planning alternatives shall be stated and evaluated in terms of both amount and quality of habitat and of animal population trends of the management indicator species.". How can the EA say that it is meeting population viability trends when no past population numbers and surveys exist? The NFMA violation applies to the pine marten, another old growth MIS. .

Even though there is some information on historic forest structure in the area from sources including the Geographic Assessment for the Coeur d'Alene Basin, the Assessment of Ecosystem Components in the Interior Columbia River Basin and in modeling done based on historic records by the Idaho Panhandle National Forest as stated in the Deerfoot EA, these records and models indicate that more habitat existed for pileated woodpeckers historically (EA pg. 3-137). Again violating NFMA 36 CFR 219.19 (a)(2) and 36 CFR 219.19 (a)(6) for population trends and habitat change relationship.

Northern Goshawk

Within the Deerfoot project area, there is "one known occupied territory and two additional territories that could be occupied" yet the EA states that it is compliance with the Region 1 viability standard by "having three nesting territories" (EA pg. 3-118). How can that be three, when two are defined as, "could be occupied".

Region 1 has defined viability for the goshawk as one pair every 10,000 acres (Warren 1990; PF Doc. WL-R15). Recommendations have been established for management of the Northern goshawk in the Southwestern United States (Reynolds et al. 1992; PF Doc. WL-R16). These recommendations suggest goshawk home ranges are about 6,000 acres in size and consist of a nesting area of 20-25 acres, a post-fledgling family area (PFA) of 400 acres, and a foraging area approximately the size of the home range. Therefor the home range should be 6,000 acres in size. The Deerfoot EA however has mapped about 5,000 acres of foraging habitat around nesting habitat.

Once again population viability is uncertain for the northern goshawk in north Idaho, and there for violates as NFMA at 36 CFR § 219.19(a)(2) and as NFMA at 36 CFR § 219.19(a)(6). Please see ***Failure to Monitor MIS*** section.

Failure to Monitor MIS

The IPNF's failure to incorporate scientific findings for snag guidelines, to monitor MIS and to meet Forest Service old growth and snag guidelines are violations of the Forest Plan, NFMA, and NEPA.

> Without having monitored the population trends of indicator and Sensitive species, the IPNF cannot know the impacts of Forest Plan implementation on these species. It cannot know whether its the Forest Plan's old growth retention standards or snag and cavity nesting retention guidelines are adequate for the persistence of old growth dependent and cavity nesting species in the face of large-scale logging and road building projects. It cannot know whether it has maintained viable populations as NFMA at 36 CFR § 219.19(a) requires the Forest Plans do: ("establish objectives for the maintenance and improvement of habitat for management indicator species"). The regulations also require under 36 CFR § 219.27 (a)(6) that the Forest Service to "Provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species and provide that habitat for species chosen under § 219.19 is maintained and improved to the degree consistent with multiple-use objectives established in the plan."
>
> Researchers have noted for many years that snag-retention levels were inadequate in many "managed" Forests, and that more and larger snags would need to be left in order to provide adequate habitat for both primary and secondary cavity nesters (Bull 1997, Balda 1975, Evans 1995, Torgerson and Bull 1995). Research in recent years has also shown how burned forests with high levels of snags provide particularly important habitat for several species of woodpeckers that opportunistically colonize these areas.

For the MIS northern goshawk, which is also on the Sensitive species list: "Little historical information is available for goshawks. Urbanization, road construction and timber harvest have decreased the quality of mature forests and riparian habitat in the resource area and across the forest. Losses of nesting habitat and decreased variety and abundance of prey species often tied to riparian areas indicates that goshawks may have historically been more abundant than they are today. In the majority of the western states, goshawks are considered to be on a downward trend, although populations appear to be stable in Idaho (EA pg. 3-118).

Sensitive Wildlife Species:
On the IPNF the listed Sensitive species include the lynx, fisher, wolverine, black-backed woodpecker, white-headed woodpecker, and flammulated owl.

In a March 12, 1999 memo the Regional Forester updated its Sensitive species list to include the white-headed woodpecker on the IPNF. Yet the EA failed to disclose direct, indirect, and cumulative impacts. The IPNF completely failed to prepare a Biological Evaluation for this Sensitive species.

The Forest Service Manual obligates Forest Supervisors to "[d]etermine distribution, status, and trend of . . . sensitive species and their habitats on Forest lands," [see Forest Service Manual (FSM) 2670.45(4)], and to document possible impacts to sensitive species of an activity in a "biological evaluation." FSM 2672.4, 2672.41, 2672.42.

We note that Forest Service policy is clear: for projects that affect the habitat for a Sensitive species, a Biological Evaluation is required. The Forest Service Manual spells out specific requirements which deal with Sensitive species, and calls for the performance of Biological Evaluations to assure that projects on Forest Service land are done in compliance with the National Forest Management Act and the National Environmental Policy Act. A "Biological Evaluation" (BE) is defined at FSM 2670.5(3) as:

> A documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species. FSM 2672.4 requires that the Forest Service review all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings.

In response to USDA Regulation 9500-4 and NFMA's viability provisions, the Forest Service Manual also outlines the need to design and implement conservation strategies for Sensitive species such as the white-

headed woodpecker. And FSM 2621.2 requires conservation strategies for sensitive species for projects and biological assessments to devise these strategies.

The IPNF's 1998 Forest Plan Monitoring and Evaluation Report states, regarding the white-headed woodpecker on pages 59-60:

> White-headed woodpeckers generally nest in snags that have lost at least half their bark. ...The limiting factor for this species is availability of large diameter (at least 20" diameter) ponderosa pines in patches large enough to be nesting habitat.
>
> ...Recommendation: Implement the draft conservation strategy for this species.

And regarding the White-headed woodpecker's main habitat component, soft snags, the same Monitoring and Evaluation Report states, "Results show that soft snags ...comprise less than 10 percent of the total number of snags that are retained. This is likely a result of post harvest activities that in many cases require the falling of snags which are in advance decay for safety purposes." (Id. at 64-65).

The Forest Service Manual specifies how BEs must deal with cumulative effects. Project BEs must contain "a discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects" [FSM 2672.42(4)].

In failing to prepare a conservation strategy and complete a Biological Evaluation that considers cumulative effects—indeed in failing to include any analysis for the Sensitive white-headed woodpecker—the IPNF has ignored its own policies. Therefore the Deerfoot EA violates NEPA and lack sufficient basis for claiming the approved logging is consistent with NFMA.

Forest Plan Monitoring item F-1 requires the annual monitoring of "Population trends of indicator species" and this monitoring information is to be reported every 5 years. The IPNF, in a letter dated May 20, 1999, stated that no population trend data is available for the pileated woodpecker and the northern goshawk[2]. Despite the selection of these two species as forestwide MIS and the Forest Plan's monitoring requirements, the IPNF has, in approximately 12 years of implementation of the Forest Plan, failed to monitor population trends as the Forest Plan requires.

Furthermore, without having monitored the population trends of indicator and Sensitive species, the IPNF cannot know the impacts of Forest Plan implementation on these species. It cannot know whether its the Forest Plan's old growth retention standards or snag and cavity nesting retention guidelines are adequate for the persistence of old growth dependent and cavity nesting species in the face of large-scale logging and road building projects. It cannot know whether it has maintained viable populations as NFMA at 36 CFR § 219.19(a) requires the Forest Plans do: ("establish objectives for the maintenance and improvement of habitat for management indicator species"). The regulations also require under 36 CFR § 219.27 (a)(6) that the Forest Service to "Provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species and provide that habitat for species chosen under § 219.19 is maintained and improved to the degree consistent with multiple-use objectives established in the plan."

Black-backed Woodpecker

A field survey for population numbers needs to be done for the black-backed woodpecker to evaluate its distribution the Deerfoot project area since its "There is little information about historic sightings or populations of black-backed woodpeckers. It is likely that their habitat has declined over the past century because of their preference for post-fire habitats" (EA pg. 3-126). The EA infers that the species may inhabit the area because the potential habitat exists in old growth stands and similar habitat in Washington is occupied.

White-headed Woodpecker and Flammulated Owl

A field survey for population numbers needs to be done for the white-headed woodpecker and flammulated owl to evaluate its distribution the Deerfoot project area since its "There are no historical records of these species specifically" (EA pg. 3-122).

[1] A copy of this document was supplied to the Appeal Deciding Officer with the appeal of the Douglas-fir Beetle ROD, IPNF, in 1999.

In a March 12, 1999 memo the Regional Forester updated its Sensitive species list to include the white-headed woodpecker on the IPNF. Yet the FEIS failed to disclose direct, indirect, and cumulative impacts. The IPNF completely failed to prepare a Biological Evaluation for this Sensitive species.

The Forest Service Manual obligates Forest Supervisors to "[d]etermine distribution, status, and trend of . . . sensitive species and their habitats on Forest lands," [see Forest Service Manual (FSM) 2670.45(4)], and to document possible impacts to sensitive species of an activity in a "biological evaluation." FSM 2672.4, 2672.41, 2672.42.

We note that Forest Service policy is clear: for projects that affect the habitat for a Sensitive species, a Biological Evaluation is required. The Forest Service Manual spells out specific requirements which deal with Sensitive species, and calls for the performance of Biological Evaluations to assure that projects on Forest Service land are done in compliance with the National Forest Management Act and the National Environmental Policy Act. A "Biological Evaluation" (BE) is defined at FSM 2670.5(3) as:

> A documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species. FSM 2672.4 requires that the Forest Service review all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings.

In response to USDA Regulation 9500-4 and NFMA's viability provisions, the Forest Service Manual also outlines the need to design and implement conservation strategies for Sensitive species such as the white-headed woodpecker. And FSM 2621.2 requires conservation strategies for sensitive species for projects and biological assessments to devise these strategies.

The IPNF's 1998 Forest Plan Monitoring and Evaluation Report states, regarding the white-headed woodpecker on pages 59-60:

> White-headed woodpeckers generally nest in snags that have lost at least half their bark. ...The limiting factor for this species is availability of large diameter (at least 20" diameter) ponderosa pines in patches large enough to be nesting habitat.
>
> ...Recommendation: Implement the draft conservation strategy for this species.

And regarding the White-headed woodpecker's main habitat component, soft snags, the same Monitoring and Evaluation Report states, "Results show that soft snags ...comprise less than 10 percent of the total number of snags that are retained. This is likely a result of post harvest activities that in many cases require the falling of snags which are in advance decay for safety purposes." (Id. at 64-65).

The Forest Service Manual specifies how BEs must deal with cumulative effects. Project BEs must contain "a discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects" [FSM 2672.42(4)].

In failing to prepare a conservation strategy and complete a Biological Evaluation that considers cumulative effects—indeed in failing to include any analysis for the Sensitive white-headed woodpecker—the IPNF has ignored its own policies. Therefore the Deerfoot EA violates NEPA and lack sufficient basis for claiming the approved logging is consistent with NFMA.

Snag Retention Does Not Meet Forest Plan

Researchers have noted for many years that snag-retention levels were inadequate in many "managed" Forests, and that more and larger snags would need to be left in order to provide adequate habitat for both primary and secondary cavity nesters (Bull 1997, Balda 1975, Evans 1995, Torgerson and Bull 1995). Research in recent years has also shown how burned forests with high levels of snags provide particularly important habitat for several species of woodpeckers that opportunistically colonize these areas. The EA acknowledges that lack of snags and snag retention, "large diameter snags are in short supply and canopy closure in many stands is less than optimal for pileated woodpeckers" (EA pg. 3-138), "Within the Deerfoot Resource Area, large-diameter standing and dead trees are less abundant than historically, and the wildlife species associated with these habitat components are probably less abundant as well (EA pg. 3-114), "In some areas of Region 1, monitoring has shown that snag retention may not be fully met following the many stages of project implementation...there will be little reduction in snags in the resource area as a result of project activities since all existing snags will be retained unless they pose a threat to forest workers, but decreased canopy closure may result in less preferred overall snag habitat in these" (EA pg. 3-114). Will the project area meet Region One snag guidelines and provide at least 10 snags per acre as recommended?

Old Growth:

The EA does not disclose if the IPNF is meeting Forest Plan old growth standard 10(b), which requires the FS to "Maintain at least 10 percent of the forested portion of the IPNF as old growth." As the Court in Cuddy Mountain stated: "Pursuant to NFMA, the Forest Service must demonstrate that a site-specific project would be consistent with the land resource management plan of the entire forest." The Deerfoot EA fails to meet the legal standard established by Cuddy Mountain.

Moreover, the IPNF's position on this issue contradicts previous statements by the Forest Service itself, which recognizes that forest wide habitat issues relate to species viability. In their response to comments on the Dry Fork Vegetation and Recreation Restoration Project Environmental Assessment, Lewis & Clark National Forest, 2000, the Forest Service acknowledges that viability is not merely a project area consideration, that the scale of analysis must be broader:

> Population viability analysis is not plausible or logical at the project level such as the scale of the Dry Fork Vegetation and Recreation Restoration EA. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas and in most cases larger than National Forest boundaries. (Dry Fork EA Appendix D at p. 9.)

This is relevant in the case of the Deerfoot Project because, if the IPNF cannot demonstrate it has met its forestwide 10% old growth Standard, every forest stand in the project area that has any habitat value whatsoever for old growth species is needed for maintaining viable populations of old growth species, until the IPNF can prove otherwise. We point out that the Deerfoot EA still has not demonstrated compliance with old growth Standard 10(b), which means under the Cuddy Mountain tests the EA is inadequate. If we assume it's true that historically, old growth was fond on approximately 10-25% of the landscape then how can the IPNF assume that compliance with Forest Plan old growth standards, if indeed it does comply, will maintain the distribution of dependent species as NFMA requires?

We have previously demonstrated that the IPNF's forestwide old growth inventory is flawed (Refer to and included as part of our EA comments, Attachment 1 of the appeal of the East Slate ROD submitted by the Ecology Center, Alliance for the Wild Rockies, and the Lands Council, which is a Declaration submitted in the Lands Council v. Vaught federal court action against the IPNF and the Colville National Forest).

Furthermore, how could previously allocated old growth "no longer met the criteria for old growth" as stated in the EA (pg. 3-138)? What are the "dynamic, changing conditions inherent in forested stands of timber" and why were "old growth allocation in the 2 OGMUs was changed to reflect current conditions of the stands in the resource area and across the basin" (EA pg. 3-138)? Is that allowed under NFMA, NEPA and the IPNF Forest Plan?

Thus. any decision based upon an assumption that the IPNF is meeting old growth standard 10(b) is arbitrary and capricious.

In order to assure that the kind of "treatments" prescribed for the old growth in the Deerfoot project area will still result in old growth, it is necessary to be instructed by results from past efforts. We note that there is no reference in the EA to any long-term, peer-reviewed scientific study that indicates one can successfully replace natural processes with management-imposed changes so the old growth like that proposed to be "treated" can be maintained over time. That is because the interrelationships between the soils, the microorganisms in the soil, the moisture and dead wood in the soil, large standing and down pieces of wood, and the countless other plants and animals associated with old growth are far too complex to be replicate in any experiment. The relevance of these failures to the Deerfoot Project is obvious: the IPNF has approved of more logging and road building activities that would remove important habitat components for the survival of these MIS species.

ICBEMP:
The EA refers to the Deerfoot EA analysis being "tiered" to several documents, Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin, Toward an Ecosystem Approach: An Assessment of the CDA River Basin, IPNF Forest Plan, Available Conservation Assessments and Strategies for Wildlife Species, Douglas-fir Beetle Project Final EIS, and additional scientific literature as appropriate, but fails to identify what components and information is being used and how to analyze issues and concerns. These documents do not replace discussions needed for a site-specific NEPA analysis.

The EA fails adopts ICBEMP's recommendations for goshawk, which is said to be the most up to date science, but fails to identify, discuss, protect or even analyze fledging areas. NEPA (Sec 1500.1 (b)) requires that up to date science be used for implementation of a federal project.

Economics:
According to the EA, a large wildfire in the Deerfoot Resource Area would threaten homes, private land, and the Hayden viewshed; reduce air quality; threaten public safety; and could prompt home evacuations. Since when has a Forest Service NEPA document taken into account the impacts of home evacuations on the community?

Wildfires "affect the surrounding community that will have to help support evacuees with food, shelter and comfort. Economic impacts could be significant, since the tourism industry in the affected area would likely be slowed by the presence of a large fire in the area" (EA pg. 1-5). If that is such a huge concern than the Forest Service needs to allocate more resources to treat and create defensible space within a half mile Wildland Urban Interface zone. This is discussed in the fuels and fire section.

The Deerfoot Project is another typical deficient timber sale in which the costs for preparing, analyzing and implementing the proposed Alternative far exceeds the timber sale receipts. Table 2-14 summarizes the costs of each alternative. The FS's preferred Alternative 4 is the most costly, - $1,725,000 verses Alternative 2 (no commercial timber sale) of only - $640,000 (EA pg. 2-14). Now the public can see how the Forest Service on a whole is loosing close to $1 billion in their timber sale program.

Futhermore, the comparison of alternatives in Table 2-4 and then the comparison of costs for each treatment is not consistent. Table 2-14 shows that the cost of Slash Disposal/non-harvested acres for Alternative 2 is $397,000 for 548 acres and for Alternative 4 is $226,000 for 269 acres which is about $724.45/acre and $840.15/acre, respectively. Table 2-4 lists the acres for prescribed burning for both Alternatives, but there is not cost analysis for the underburning for any Alternatives. Full disclosure of the costs associated with underburning would assist in evaluating the full costs of the alternatives. Hypothetically speaking, if it costs $1,000/acre to underburn after any treatment or for just a prescribed burn, then the costs would be an additional $54,800 for Alternative 2 and $160,000 for Alternative 4. These numbers in the EA do not Forest Service policy (FSM 2470.3) (USDA, 1990) and Regional Guide (USDA, 1983) that directs land managers to:

> 2. Prescribe treatments that are practical in terms of cost of preparation, administration, transportation systems and logging methods.

There are two tiers of federal regulations that govern and apply to all timber sale economic analyses on National Forest lands. The first tier consists of a single National Forest Management Act (NFMA) regulation that simply mandates that an analysis be completed. The second tier consists of an additional NFMA regulation and a National Environmental Policy Act (NEPA) regulation that place general requirements for the nature of the material that will be utilized in the economic analysis.

Relevant Legal Authority for NEPA and NFMA

The Forest Service's regulation of the National Forests is governed by the National Forest Management Act, 16 U.S.C. §1600 et seq., and the Act's implementing regulations, 36 C.F.R. § 219. The Forest Service's management of the National Forests occurs at two levels. "At the first level, the Forest Service develops the Forest Plan, a broad, programmatic document, accompanied by an [EIS] and public review process conducted in accordance with [NEPA]." Dombeck, 185 F.3d at 1167-68; see 16 U.S.C. §1604(d); 36 C.F.R. § 219.10(b). The Forest Plan must incorporate the "multiple use" and "sustained yield" principles of the National Forest Management Act, including providing for biodiversity and the maintenance of native animal populations. Dombeck, 185 F.3d at 1167-68; see 16 U.S.C. §1604 (e)(1), (g)(3)(B), (g)(3)(c); 36 C.F.R. §§ 219.19, 219.26. "At the second level, the Forest Service implements the Forest Plan by approving (with or without modification) or disapproving particular projects," Dombeck, 185 F.3d at 1168. Each project is subject to further NEPA review and the "[p]roposed projects must be consistent with the Forest Plan." Id.; see 16 U.S.C. §1604(i); 36 C.F.R. § 219.10(e).

Both NFMA and NEPA and their respective implementing regulations apply to an EIS or EA for a timber sale on National Forest Land. The NFMA (16 U.S.C. § 1600) and its implementing regulations (36 C.F.R. § 219) govern the Forest Service's management of the National Forest System and are therefore applicable. The NFMA at 36 C.F.R. § 219.10 (b) requires compliance with the NEPA (42 U.S.C. 4371) and its implementing regulations (40 C.F.R. § 1500). Alternately, the NEPA applies to all "major federal actions significantly affecting the quality of the environment".

These three federal regulations work together to: a) require the Forest Service to complete an economic impact analysis, and b) require the Forest Service to obtain the "best available" data and use data of a quality and character that is appropriate for the management decision to be made. Supplementing these regulations, the Forest Service Handbook requires that the Forest disclose the costs of proposed actions in the Forest Service Handbook 1971.4 - Analyzing Costs and 1971.41 - Cost Analysis Objectives.

The Forest Service did not disclose the costs of the proposed action and therefore failed to complete an adequate cost-benefit analysis as described above. Costs of conducting the NEPA process, administering the timber sale, road construction, road maintenance, mitigation, monitoring, and any other cost incurred by the Forest Service in association with the proposal should have been disclosed in the EA. Because this important data was left out of the economic analysis, the Forest Service has failed the meet the requirements of the NFMA and the NEPA outlined above.

Roads:

One of the biggest ecological impacts, as well as being a financial burden to the Forest Service and taxpayer, is the 430,000 miles of roads the Forest Service manages and administers to. It is estimated by former USFS Chief Mike Dombeck that the FS has a $10 billion backlog in road maintenance. Even an additional 1.15 miles of new roads and 28.71 miles of road reconstruction and 16.77 miles of reconditioning adds greater financial burden to a system already inept in managing their current inventory.

Along with new roads, reconstructed roads, and reconditioned roads, more traffic will occur. Increased road traffic greatly increases erosion and sediment delivery to streams (Potyondy, 1991). Consequently there will be an increase in stream sedimentation which negatively affects salmonids by increasing fine sediments in spawning habitat and contributing to loss of pool volume and elevated turbidity (Reid, 1994). Road traffic effects are highest at/near road crossings and during wet periods (Reid, 1994).

The EA claims that all new construction roads on the long-term plan which where not incorporated into the Deerfoot Project will be evaluated through future analysis at the time their need is established. Not taking into account the new 1.15 miles of roads to be built under Alternative 4 violates NEPA and the Forest Service Handbook. Forest Service is required to disclose and consider the cumulative impacts of past, present, and future actions in an EIS. NEPA at § 1508.25 makes this clear,

> *agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:*
>
> > *(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.*

As throughout our national forest system, road closures that use gates and earth berms have proven to be ineffective. This is evident in the Deerfoot Resource area where road closures are being breached by off-road vehicles and motorized vehicles have pioneered trails, creating travel routes that are not sanctioned or maintained by the Forest Service, including earth berms and the placement of boulders and logs. To think that the Forest Service will effective close the 1.15 miles of new roads and nearly 30 miles of reconstructed roads under Alternative 4 roads for wildlife security unrealistic.

Thank you once again for illustrating and analyzing Alternative 2 which was proposed by The Lands Council. We hope that further pubic review on the EA will help you decide to choose Alternative 2, as its benefits far outweigh the other action alternatives.

Please send each group the Final EIS and Decision Notice when it is ready for public review.

Sincerely,

Rein Attemann
Forest Watch/Selkirk Coordinator
The Lands Council
423 W. First Ave Suite 240
Spokane, WA 99201

Mike Petersen
President, National Forest Protection Alliance
423 W. First Ave Suite 240
Spokane, WA 99201

On behalf of

Jeff Juel
The Ecology Center Inc.
801 Sherwood St. Suite B
Missoula, MT 59802

Hal Rowe
Upper Columbia River of the Sierra Club
65 W. Main
Spokane WA 99201

LITERATURE CITED

Ament, R. 1997. Fire policy fir the Northern Rocky Mountains (U.S.A.). American Wildlands Report #12. Bozeman, MT.

Arno, S.F, J.H. Scott and M.G. Hartwell. 1995. Age-class structure of old growth ponderosa pine/Douglas fir stands and its relationship to fire history. U.S. Forest Service Research Paper I NT-RP-481.

Bull, Evelyn, Catherine Parks and Torolf Torgersen. 1997. Trees and Logs Important to Wildlife in the Interior Columbia River Basin. General Technical Report PNW-GTR-391.

Balda, R. 1975. The relationships of secondary cavity nesters to snag densities in western coniferous forests. Forest Service Wildlife Habitat Technical Bulletin No. 1, Southwest Region, Albuquerque, New Mexico.

Evans, Diane and Dean Martens. 1995. Snag and woody debris guidelines for timber harvest projects. McCall, ID: Payette N.F.

Gook, D. 1984. Nest tree selection by primary cavity-nesting birds in selectively logged forests of south central British Columbia. Unpublished report, B.C. Ministry of Environment, Kamloops, B.C. 335-339.

Hessburg, P.F. and J.F. Lehmkuhl. 1999. Results of blind scientific peer review of the Wenatchee National Forest's dry forest strategy and a case study of its implementation in the Sand Creek Ecosystem Restoration Project. USDA Forest Service, Pacific Northwest Research Station.

Johnson, C.G., Jr., Clausnitzer, R.R. Mehringer, P.J. and C.D. Oliver. 1994. Biotic and abiotic processes of eastside ecosystems: the effects of management on plant and community ecology, and on stand and landscape vegetation dynamics. PNW-GTR-322. USDA, Forest Service, Portland OR.

Hammer, K.J. 2000. Pondersoa poster child: U. S. Forest Service misrepresenting the historic condition of Western forests and the effects of fire suppression and logging. prepared for Friends of the Wild Swan and Swan View Coalition. Kalispell, MT.

Hutto, R. L. 1995. Composition of bird communities following stand-replacement fires in the Northern Rocky Mountain (U.S.A.) conifer forests. Conservation Biology 9:1041-1058.

Leiberg, John B. 1897. General report on a botanical survey of the Coeur d'Alene mountains in Idaho during the summer of 1895. USDA, Division of Botany, The US National Herbarium. Vol. V, No. 1.

McClelland, B.R. 1977. Relationships between hole-nesting birds, forest snags, and decay in western larch - Douglas-fir forests of the northern Rocky Mountains. Ph.D. thesis, School of Forestry, University of Montana, Missoula, Montana. 489 p.

McClelland, B.R. and S.S. Frissell. 1975. Identifying forest snags useful for hole-nesting birds. Journal of Forestry 73:414-417.

McClelland, B.R., S.S. Frissell, W.C. Fischer and C.H. Halvorson. 1979. Habitat management for hole-nesting birds in forests of western larch and Douglas-fir. Journal of Forestry 77:480-483.

Potyondy, J.P., Cole, G.F., Megahan, W.F., 1991. A procedure for estimating sediment yields from forested watersheds. Proceedings: Fifth Federal Interagency Sedimentation Conf., pp. 12-46 to 12-54, Federal Energy Regulatory Comm., Washington, D.C. (this is from research in Central Idaho).

Reid, L.M. and Dunne, T., 1984. Sediment production from forest road surfaces. Water Resour. Res., 20: 1753-1761. (This is from research from Olympic Penninsula)

Shinneman, D.J. and W.L. Baker. 1997. Nonequilibrium dynamics between catastrophic disturbances and old-growth forests in ponderosa pine landscapes of the Black Hills. Conservation Biology 11: 1276-1288.

Tiedemann, A. R., J. O. Klemmedson, and E. L. Bull, 2000. Solution of forest health problems with prescribed fire: are forest productivity and wildlife at risk? Forest Ecology and Management 127 (2000) 1-18.

Torgersen, T. and E. Bull. 1995. Down logs as habitat for forest-dwelling ants –the primary prey of Pileated Woodpeckers in northeastern Oregon. Northwest Science 69:294-303.

USDA Forest Service. 1998. The IPNF Forest Plan Monitoring and Evaluation Report, 1998. Coeur d'Alene, Idaho.

USDA Forest Service. 2001. The IPNF Forest Plan Monitoring and Evaluation Report, 2001. Coeur d'Alene, Idaho.

USDA Forest Service. 2003. Hayman Fire Case Study Analysis Executive Summary, Interim Draft. Rocky Mountain Research Station Fort Collins, Colorado. Published in Ogden,UT. Pp.20.

Veblen, T.T., T. Kitzberger and J. Donnegan. 2000. Climatic and human influences on fire regimes in ponderosa pine forests in the Colorado front range. Ecological Applications 10(4):1178-1195.

Walder, B. 1995. Silviculture vs. nature: an ecological assessment of forest health alternatives. MS Thesis. Univ. of MT. Missoula, MT.

Webb, T., III and P.J. Bartlein. 1992. Global changes during the last 3 million years: climatic controls and biotic responses. Annual Review of Ecology and Systematics 23:141-173.

Hayman Fire Case Study Analysis

Executive Summary

Rocky Mountain Research Station
USDA Forest Service
Fort Collins, Colorado

INTERIM DRAFT

Introduction

The weather systems occurring along the Colorado Front Range beginning in 1998 tended to bring below normal precipitation and unseasonably dry air masses. These conditions occurred approximately the same time as the phenomenon known as La Nina began forming in the eastern Pacific Ocean. The winter of 2001 to 2002 saw a marked worsening of drought conditions. The predominantly ponderosa pine forests throughout the region became drier with each passing season and by the spring of 2002 the fuel moisture conditions were among the driest seen in at least the last 30 years. The moisture contents of the large dead logs and stems along the Front Range were extraordinarily low with most less than 10 percent and some moisture contents less than 5 percent. Normally, in the spring, the moisture contents of these fuels would exceed 12 percent.

During the first week of June 2002 a weak weather system passed through forests west of Denver and Colorado Springs, CO, dropping some precipitation, but this rain had virtually no effect on the parched surface and dormant live fuels. On Saturday, June 8 the air mass over Colorado was extremely dry and a front approaching from the north brought winds exceeding 15 mph all day with gusts exceeding 30 mph. At approximately 4:55 in the afternoon just south of Tarryall Creek and Highway 77 near Tappan Mountain the Hayman Fire was reported (fig.1). An aggressive initial attack response consisted of air tankers, helicopters, engines, and ground crews but they were unable to contain the fire. Within a few hours torching trees and prolific spotting advanced the fire to the northeast and allowing it to burn several hundred acres.

Saturday night remained warm and dry (60 °F and 22 percent humidity at Lake George near the fire start) and by 8:00 a.m. on June 9, the fire was estimated at 1,000 to 1,200 acres in size. Downwind from the ignition location for at least 10 miles fuels were generally continuous, with little variation in both structure and composition. Surface fuels generally consisted of ponderosa pine duff and needle litter, short grasses, and occasional shrub patches. Low crowns of the ponderosa pine, Douglas-fir, and blue spruce facilitated the transition of the fire from the surface to burning tree crowns.

The winds were blowing from the southwest and in general alignment with the orientation of the Platte River drainage. Winds gusted to 51 mph from the southwest and the relative humidity hovered around 5 to 8 percent enhancing the spread of the fire to the northeast. The combination of fuels, weather, and topography positioned the fire for a

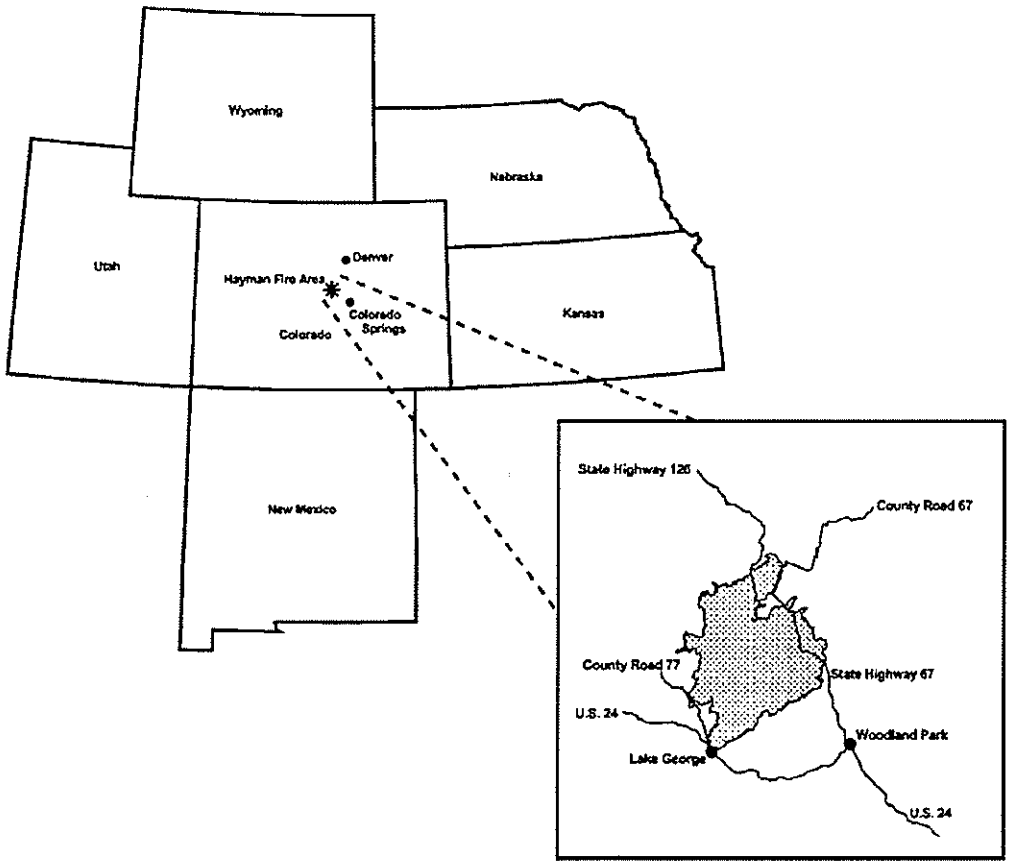

Figure 1—The Hayman Fire was located on the Front Range between Denver and Colorado Springs,

major run lasting the entire day and burning 60,000 acres along the South Platte River corridor for 16 to 19 miles. Evacuations were performed in front of the fire, but no suppression actions were possible forward (east) of U.S. Highway 24. The fire was intense with long crown fire runs and long-range spotting (1 mile or more). Fire spread rates from approximately 5:00 p.m. to 11:00 p.m. averaged more than 2 mph. Pyrocummulus clouds developed to an estimated 21,000 feet (fig. 2). The fire acquired a forked appearance as it burned down both sides of the Cheesman Reservoir (fig.3). The eastern head of the fire was slowed when it entered the Polhemus prescribed burn that occurred in October 2001, and the fire was prevented from burning west toward the town of Deckers by the earlier Schoonover wildfire (May 2002).

On the afternoon of June 10 the high winds decreased and the relative humidity increased moderating the weather, which persisted until the afternoon of June 17. During this period, the fire advanced mostly to the south and several miles to the east. Burnout operations were conducted and firelines constructed along most of the eastern and southern perimeter of the fire as the fire covered over 114,000 acres.

The high winds and low humidity returned on June 17 and 18. Fire intensity increased across the entire east flank of the fire, driven by west to northwest winds. Two

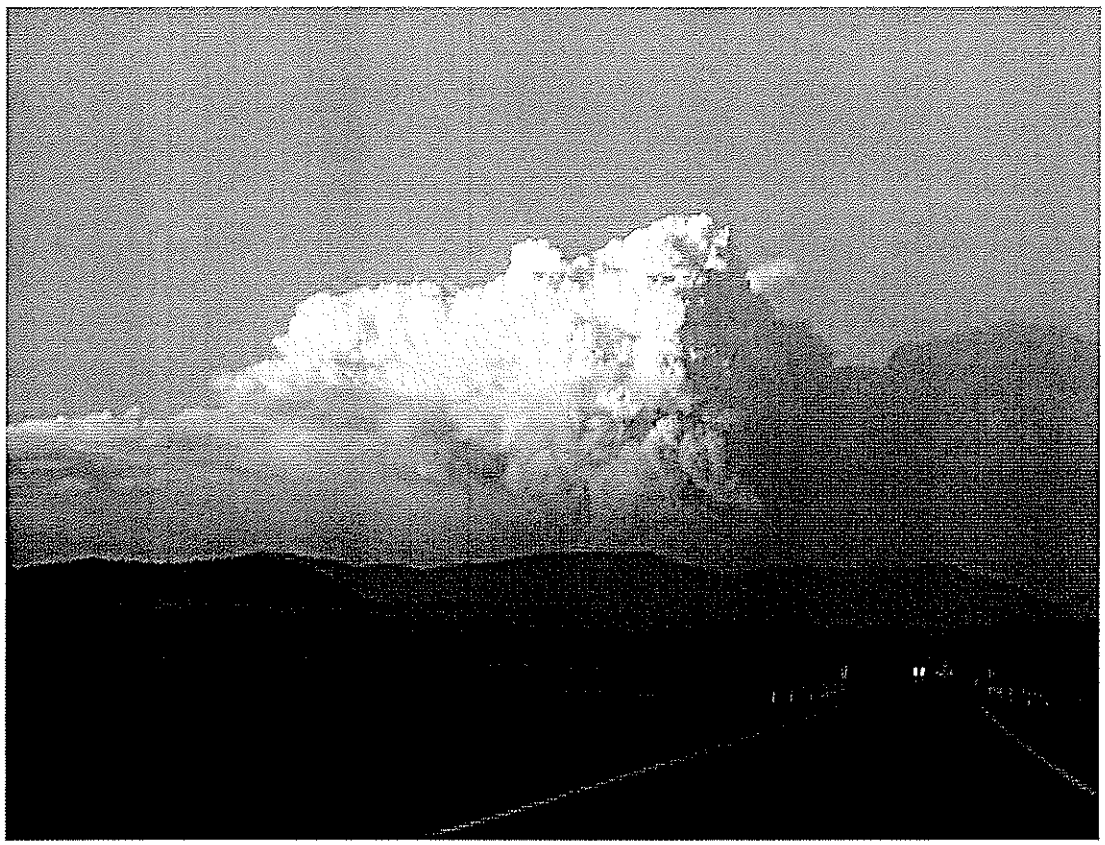

Figure 2—Pryocummulus clouds over the Hayman Fire on June 9th.

prescribed burns and the Big Turkey wildfire (1998) limited the initiation of crown fire runs on June 17 along a 2-mile section of fire perimeter. The fire advanced to the east 4 to 6 miles on June 18, burning into Manitou Experimental Forest and across Highway 67 encircling over 137,000 acres. Because moist monsoon weather arrived, the fire made little progress after June 18. By June 28th the Hayman Fire impacted nearly 138,000 acres of the Colorado Front Range.

The mountains and forests of the Front Range between Denver and Colorado Springs are critical for supplying water to communities and cities, prized for its scenery, provides numerous recreational opportunities, home to many fishes, animals, and the setting for many homes, businesses, and communities. Because of this setting the Hayman Fire attracted intense, local, regional, and national interest. Before the flames had died, Congressman Mark Udall of Colorado on June 26, 2002, indicated that it would "be instructive to take a close look at the behavior of the fire, examine the factors that led to its intensity, and see if the way it behaved when it encountered previously affected or treated areas can be instructive in designing future risk-reduction projects." He went on to "suggest that the Chief of the Forest Service establish a Hayman Fire Review Panel. Its purpose would be to focus on the future, rather than to attempt to assign blame for past events."

Congressman Udall raised several issues ranging in scope from how the fire behaved to how the fire impacted the soil and water resources of the Front Range. Using Congressman Udall's suggestions as a basis on July 22, 2002, the USDA Forest Service Rocky Mountain Research Station in cooperation with USDA Forest Service Rocky

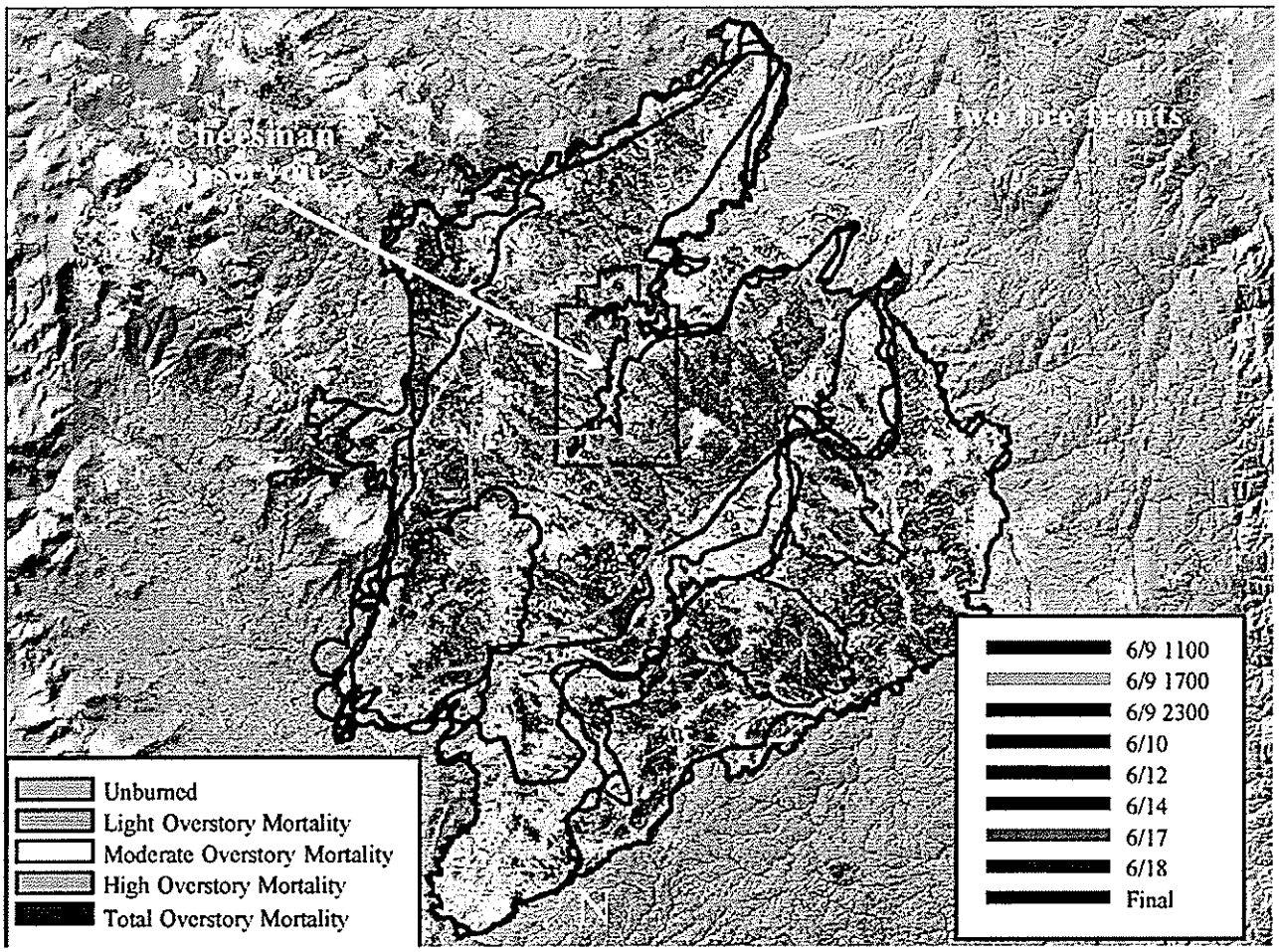

Figure 3—Fire progression map showing the two fire fronts created when the fire encountred the Cheesman Reservoir.

Mountain Region, and the State of Colorado Forest Service assembled the Hayman Fire Case Study Analysis Team. This team of Federal, State, and local experts from throughout the United States came together and developed an analysis framework to address the issues the Congressman disclosed. Analysis questions were divided among teams addressing fire behavior, home destruction, social and economic impacts, fire rehabilitation, and ecological effects. Using the Congressman's issues each team developed a set of analysis questions and their own approach to answering the questions in a timely manner. Techniques used by the teams included interviews, analysis of existing data, expert opinion, Hayman Fire Reports, and other available information. The following highlights each team's interim findings addressing the analysis questions. Members of each team are listed following this Executive Summary.

Fire Behavior

Mark A. Finney led a team addressing fire behavior, fuel treatments, and fire suppression. This team addressed the questions through the collection and analysis of data on fire climatology and meteorology, fire behavior, fuel treatments, road density, and fire suppression activities. The interim findings of the team include:

How did weather, fuels, and topography affect observed growth and behavior of the Hayman Fire?

- The potential for extreme fire behavior was predisposed by drought. Below normal precipitation the past several years and the acute drought in 2002 brought about very low moisture contents of live foliage, duff, and dead fuels of all size classes.
- The Hayman Fire began and ended with extreme weather episodes lasting about two days each (June 8 and 9, and June 17 and 18). More moderate weather occurred during the intervening 6 days. Extreme weather conditions consisted of high winds (20 to 50mph) and low humidity (5 percent). Widespread crown fire and long-range spotting lead to rapid growth and ultimately the large size of the fire. Abatement of winds and higher humidity during less extreme weather moderated fire behavior and effects, even with the abnormally low fuel moisture contents.
- Different wind directions associated with the two extreme weather episodes increased the size of the fire. The east flank of the fire that developed under southwest winds of June 8 and 9, became a heading fire on June 17 and 18 when winds shifted from the northwest and west.
- Continuous surface and crown fuel structure, both horizontally and vertically, in many ponderosa pine and Douglas-fir stands rendered them susceptible to torching, crown fire, and ignition by embers, even under moderate weather conditions.
- Continuous fuels across the landscape surrounding the South Platte River drainage afforded only limited opportunity for significant disruption of growth of the fire or for improved suppression. The few large areas on the Hayman landscape that recently experienced wildfires or management activities (Schoonover wildfire 2002, Polhemus prescribed burn 2001, Big Turkey wildfire 1998) produced significant but isolated effects on fire growth.
- Orientation of the South Platte River drainage was aligned with the strong southwest winds on June 8 and 9 and likely enhanced the rapid and directionalized spread of the fire on those dates.
- The presence of Cheesman Reservoir and the adjacency of the recent Schoonover wildfire (May 2002) in the center of the spread path created and maintained the characteristic forked shape of the Hayman Fire, which had formed two distinct heads by the afternoon of June 9.

What were the fire behaviors and environmental conditions occurring at the time the Hayman Fire encountered past fuel treatments and previous burns?

- The Hayman Fire encountered most of the fuel treatments, prescribed burns, and previous wildfires within the perimeter on June 9 when the weather was extreme. Continuous crown fire and long-range spotting dominated the burning of approximately 60,000 acres that day from late morning through late evening. These extreme conditions and fire behaviors permitted intense surface fire through treated areas, leaving them with high levels of overstory crown damage. Fuel breaks and treatments were breached by massive spotting and intense surface fires.
- The fire was perhaps 20,000 acres when it encountered its first fuel treatments toward the southeastern side of Cheesman Reservoir toward mid-afternoon on

June 9. At that time it was in the middle of the burning period and had developed a large convection column.

- Weather conditions were relatively moderate June 10 through June 16 as the fire burned through Turkey prescribed fires occurring in 1990, 1995, 1987, and the 1998 Big Turkey Wildfire. Fire behavior these days was predominantly surface fire although torching and some crown fire occurred in select drainages and hillslopes.
- Extreme weather returned on June 17 and 18. Crown fire and long-range spotting was occurring at the time the fire burned into fuel treatments in the Manitou Experimental Forest and the North Divide prescribed burns.

What was the effect of those areas (fuel treatments and previous burns) on fire behavior and effects under those conditions?

- Extreme environmental conditions (winds, weather, and fuel moisture) and the large size of the Hayman Fire that developed on June 9 overwhelmed most fuel treatment effects in areas burned by the heading fire that day. This includes all treatment methods including prexcribed burning and thinning.
- Several exceptions to this included the Polhemus prescribed burn (2001), the Schoonover wildfire (2002), and the Platte Springs wildfire (2002), that occurred less than 1 year earlier. These areas did actually stop the fire locally, illustrating that removal of surface fuels alone (irrespective of thinning or changes to canopy fuels) can dramatically alter fire behavior within one year of treatment. The potential for prescribed fire to mitigate wildfire behavior will undoubtedly decrease over time. Thus, the recent occurrence of fuel modification in these areas suggests caution in trying to generalize about fuel treatment performance over many years. Fuel treatments are expected to change fire behavior but not necessarily stop fires.
- Fire behavior was modified but not stopped by stand thinning operations conducted at Manitou Experimental Forest that apparently moderated fire behavior and effects during extreme weather on June 18. Also, the fire burned rapidly through areas of the Wildcat wildfire (1963) and the Northrup prescribed burn (1992) south of Cheesman Reservoir but the open forest structure of these areas probably increased the survival of stands and trees within them.
- Under more moderate wind and humidity conditions (June 10 through 16), recent prescribed burns appeared to have lower fire severity than older burns. This is consistent with trends in fuel accretion and changes in forest fuels over time. Examples include the sequence of Turkey (1987, 1990, 1995) prescribed fires (see Finney, this report).
- Cutting treatments where surface fuels were not removed experienced high surface fire intensities but were less likely to support crown fire. For example, residual trees in the Sheep Nose timber sale (2001) were scorched and probably killed but their foliage was generally not consumed by crown fire. However, the Goose Creek timber sale was followed by prescribed fire but made little difference to severity on June 19.
- Several landscape effects of treatment units and previous wildfires were important

in changing the progress of the fire. These include the Polhemus prescribed burn (2001), which stopped the forward progress of the eastern head burning as a crown fire under extreme weather conditions, the Big Turkey wildfire (1998), and adjacent prescribed fires (Rx1990, Rx1995), which prevented initiation of crown fire along a 2 mile segment of the perimeter when extreme weather returned on June 17, and the Schoonover Wildfire (May 2002), which, together with Cheesman Reservoir, split the head of the Hayman Fire on June 9 and prevented it from flanking towards the town of Deckers.

- The size of the fuel treatment unit relative to the size of the wildfire was probably important to the impact on both progress and severity within the treatment unit. Large areas such as the Polhemus prescribed burn (approximately 8,000 acres) were more effective than small fuel breaks (Cheesman Ridge 51 acres) in changing the fire progress. Under extreme conditions of June 9, spotting easily breached narrow treatments and the rapid movement of the fire circumvented small units.
- No fuel treatments were encountered when the fire was small. The fire had time and space to become broad and generate a large convection column before encountering most treatment units. Fuel treatments may have been more effective in changing fire behavior if they were encountered earlier in the progression of the Hayman Fire before its later phases when mass ignition was possible.
- Few fuel treatments had been performed recently, leaving most of the landscape within the final fire perimeter with no treatment or only older treatments. This is significant because the high degree of continuity in age and patch structure of fuels and vegetation facilitates development of large fires that, in turn, limits the effectiveness of isolated treatment units.

What environmental and fire behavior characteristics are associated with the presence and proximity of roads within the perimeter of the Hayman Fire?

- Road density varied considerably within the perimeter of the Hayman Fire but was not found to be associated with fire severity or bio-physical conditions related to fire behavior.

What suppression activity occurred on the Hayman Fire?

- At the time of initial attack, even the unusually strong compliment of firefighting resources (air and ground) was not sufficient to contain or stop the fire due to extreme weather conditions and fuel structures that facilitated crown fire and spotting.
- On the days of extreme fire growth (June 8 and 9 and 17 and 18) burning conditions and weather dictated an indirect attack strategy with efforts focused on evacuation, structure protection where safely allowable, and direct methods on the heel and flanks of the fire.
- In the Lost Creek Wilderness little active suppression took place. Efforts were primarily directed at aerial observation, patrolling, and location and evacuation of hikers.

- Suppression efforts had little benefit from fuel modifications within the Hayman Fire. Exceptions include the Polhemus prescribed fire (2001), two previous wildfires (Schoonover 2002 and Big Turkey 1998), and thinning operations at Manitou Experimental Forest. One of the only sections of fireline indicated as controlled through June 16 was in the Polhemus burn.
- On active burning days direct line was often not held and crews retreated to safety zones until fire conditions moderated then returned to mop up around structures or defend structures where safely obtainable.
- On days with moderate weather and fire growth, the lines were defendable and structure protection was successful. For example, on June 12 structures in the Sportsman Paradise as well as in the Cedar Mountain, Turkey Creek,and along Turkey Creek were defendable even when fire behavior picked up in the afternoon hours.
- Indirect tactics were utilized when fire behavior dictated for safety reasons and when access and rough steep terrain came into play. At times, burnout operations did not take place due to unfavorable weather conditions, were not completed due to changing weather conditions, or interrupted during operational periods because work-rest ratio guidelines would have been exceeded.
- Nightshifts were used, but only on focused areas, usually around sub-divisions. Night operations primarily focused on patrolling of sub-divisions where burnout operations had taken place during the day, structure protection in areas that had recently experienced fire activity, patrolling of divisions, and improving and extending anchor points.
- After overall weather moderated with arrival of monsoon conditions after June 20, construction of and holding of direct fireline became successful.

Fire Ecology and Fire Effects

Bill Romme led a team addressing questions related to fire ecology and fire effects of the Hayman Fire. The Ecology and Fire Effects Team is composed of academic experts in the fields of fire ecology, terrestrial plant ecology, aquatic ecology, soils science, wildlife ecology, and geospatial sciences, as well as agency specialists in fire and ecosystem management. The questions they addressed included:

- What was the historical range of variability (pre-1860) in the fire regime of the Hayman landscape (including such things as fire frequency, size, severity, and seasonality), and how did the fire regime of the recent period (1860-2002) compare with the historical fire regime?
- What was the historical range of variability (pre-1860) in landscape structure (including such things as patch types, sizes, shapes, and the overall landscape patch mosaic), and how did landscape structure in the recent period (1860-2002) compare with historical conditions?
- What was the historical range of variability (pre-1860) in the frequency, extent, and locations of mudflows and other erosion/sedimentation events (related to fire or other processes); how did the frequency, extent, and locations of erosion/sedimentation events in the recent period (1860-2002) compare with historic conditions;

and how are events in the near future (next ca. 5 years) likely to compare with the historic range of variability?

- Where were key soil properties altered by the fire (including such things as organic matter content, water repellency, and productivity); and how long are these changes likely to persist?
- Where are fire-induced changes in soil properties likely to adversely affect recovery of aquatic and terrestrial ecosystems (over the short and long term) if no postfire rehabilitation is attempted; where are soil rehabilitation efforts likely to improve recovery of aquatic and terrestrial ecosystems; and where is soil rehabilitation unlikely to improve recovery of aquatic and terrestrial ecosystems?
- Where do we expect post-fire successional trajectories to result in vegetation structure and composition similar to what burned in 2002; different from what burned in 2002 but within the historical range of variability; or different from 2002 and dissimilar to or at extremes of the historical range of variability?
- What was the historical range of variability (pre-1860) in key parameters of aquatic ecosystems in the Hayman Fire area (including such things as sediment loads, chemical composition, biotic diversity, invasive species, and conditions in riparian zones) and how did aquatic parameters in the recent period (1860-2002) compare with historical conditions?
- Where are aquatic ecosystems likely to be changed by the Hayman fire? How will the changes be manifested on the landscape/watershed?
- What are the key species of invasive non-native plants & animals that may potentially invade burned areas, and where are burned areas most vulnerable to invasion over the short term (next ca. 5 years) and longer term (ca. 50-100 years)?
- To what extent and in what ways (positive or negative) was habitat for key species of concern affected by the fire (including such things as federally listed threatened & endangered species, U. S. Forest Service designated sensitive species, and game species); how is this habitat likely to change over the short term (next ca. 5 years) and longer term (ca. 50-100 years) as a result of natural ecological processes and post-fire rehabilitation efforts; and how significant are these changes in the context of the total habitat available for these species throughout their current ranges?
- What are the key ecological elements (including such things as snags, coarse woody debris, and hiding cover) that need to be retained in the Hayman landscape to enhance natural recovery of wildlife populations?

The team addressed these questions usng existing data collected in and around the Hayman area, limited observations by team members within the burned area, and expert opinion.

The interim findings of the team include:

- Because the Hayman Fire burned in an area where relatively little pre-fire research had been conducted, this assessment is based on a synthesis of (i) existing data collected in and around the Hayman area, (ii) limited observations by team members within the burned area in September, 2002, and (iii) expert opinion. We have a high degree of confidence in many of our interpretations, but some are offered as tentative hypotheses rather than firm conclusions.

- Reconstructions of fire history and forest dynamics in the Cheesman landscape, located near the center of the Hayman burn, reveal (i) an average fire interval of about 50 years during the period 1300 – 1880, but no major fires between 1880 and 2002; (ii) a mix of non-lethal surface fire and lethal, stand-replacing fire in the historic burns; and (iii) a striking increase in forest density from 1900 – 2002.
- The extent of high-severity burn in 2002 within the Cheesman landscape was unprecedented in the last 700 years, in part because of the dense forest conditions that had developed during the 20th century, and in part because of the extreme fire weather conditions that existed in 2002.
- Although fire severity in the Cheesman landscape was unprecedented, fires of comparable size and severity have occurred elsewhere in the Front Range during the last several centuries (e.g., in 1851), especially in high-elevation forests (spruce, fir, and lodgepole pine) and possibly also in ponderosa pine forests. Infrequent, but large, severe fires are a normal component of many forests in Colorado, and are *not* an artifact of 20th century fire suppression in all forests.
- In the Colorado Front Range as a whole, 20th-century fire suppression probably has altered fuel conditions and fire regimes most significantly in low-elevation ponderosa pine forests where fires were relatively frequent prior to the late 19th century. In contrast, impacts of fire suppression probably are minimal in high-elevation forests of spruce, fir, and lodgepole pine, where fires have never been frequent but where high-severity fires are the norm. Within the middle forest zone of ponderosa pine and Douglas-fir, the extent to which fire suppression has altered forest structure and fire regimes is uncertain, and probably varies from place to place. Additional research is needed to clarify historical fire regimes in mid-elevation forests of the Colorado Front Range.
- Areas of high severity burn are likely to have the greatest alterations in soil characteristics, including loss of surface soil organic matter and fire-induced synthetic water repellency. Areas where organic matter was entirely burned off may never return to the pre-fire state, but water repellent soil layers will be more ephemeral, persisting for 2 to 6 years.
- Reduced ground cover in places of high fire severity will likely result in decreased infiltration of water, increased surface runoff and peak flows, and the formation of pedestals, rills, and gullies. Erosions rates should substantially decline by the third summer after burning, and erosion from winter storms is expected to be minimal.
- The aquatic ecosystems of the South Platte River drainage within the Hayman Fire area represent a highly altered landscape that has been influenced, even before the fire, by a variety of activities including mining, vegetation management, road building, urbanization, recreation and water development.
- The recovery of the hillslope and riparian vegetation will influence how quickly the aquatic environments recover. Clearly, areas that were less severely burned will likely recover to pre-fire conditions most rapidly. Recovery of aquatic ecosystems within severely burned watersheds will be most dependent on riparian recovery, the juxtaposition to high quality habitats that can provide sources for re-colonization, and the mitigation of additional chronic disturbances.
- Rehabilitation of the aggrading perennial streams downstream from the fire will be difficult and costly, because of the large volume of sediment in the system and poor access in many areas. Efforts to accelerate the recovery of the hillslopes will

help by reducing the future inputs of sediment, but so much sediment has already been mobilized, or is poised to move into the downstream areas, that relatively little can be done to stop the problem. Hence large amounts of sediment will continue to be delivered into Cheesman Reservoir and the South Platte River, reducing reservoir storage capacity and potentially affecting fish and macroinvertebrate habitat. Over a longer time period, however, the trend will likely be toward recovery of aquatic ecosystems if other kinds of chronic disturbances can be minimized.

- Because the ecosystems that burned in 2002 have a long history of fire, the native species and populations in this area generally have mechanisms for enduring fire or becoming re-established after fire. Therefore, much or even most of the terrestrial vegetation is likely to recover normally without intervention, and in some areas our well-intentioned rehabilitation efforts actually could interfere with natural recovery processes.
- Where the vegetation is dominated by sprouting species (e.g. aspen, cottonwood, many shrubs, many grasses and other herbaceous species), a rapid return to pre-fire conditions is generally expected. We also expect a rapid return to pre-fire conditions in areas dominated by non-sprouting species (e.g., ponderosa pine and Douglas-fir forests) wherever the fire burned at low severity.
- Vegetation that is different from pre-fire conditions, but *within* the historical range of variability, is likely to develop in ponderosa pine and Douglas-fir forests where the fire burned with moderate severity, and also in *small* patches of high-severity burn. We anticipate that a new cohort of ponderosa pine seedlings will become established in these areas over the next several years.
- Development of vegetation that is different from pre-fire conditions and also is *dissimilar* to or at *extremes* of the historical range of variability for this ecosystem is expected in ponderosa pine and Douglas-fir forests within *large* patches of high-severity burn, because of high local seed mortality coupled with long distances to seed sources outside the burned area.
- Development of vegetation that is *outside* historical range of variability for this ecosystem is expected wherever invasive, non-native species become dominant. Invasion of burned areas by non-native species is a serious threat throughout the Hayman burn, because the invasive species may cause declines of native plant species and changes in fire regimes, nutrient cycling processes, and hydrology.
- Over the short term (next ca. 5 years), riparian areas are likely to be the most vulnerable to invasion by non-native plant species. Areas disturbed by rehabilitation activities are also at high risk for non-native plant species invasions. Over a longer term (ca. 50-100 years), without control measures, non-native plant species would be expected to persist in riparian and drainage areas, open-canopy areas, and along disturbance corridors such as roads.
- The potential effects of the Hayman Fire on animal and plant species listed as threatened or sensitive species for the Pike National Forest are expected to vary based on the patterns of fire severity and rehabilitation implemented. In areas of mixed-severity burn, we expect that the fire will create habitat for several species, cause minimal negative impacts for most species in the short term, and may enhance habitat availability in the long-term.
- Very large patches of crown fire will also create habitat for several species of

concern, but likely will diminish habitat availability and quality for many species that prefer mature conifer forest in the short term. The long-term effects of the large patches of crown fire are more equivocal and will depend on post-fire response of vegetation communities.

- Rehabilitation efforts (e.g., salvage logging, seeding, soil scarification) and hazard tree removal may remove or diminish critical ecological elements for wildlife that were created by fire (e.g., snags, bare mineral soil). These activities also may potentially promote invasion of non-native species, and may alter post-fire dynamics of riparian system.
- Concern remains for the Pawnee Montane Skipper, because of its restricted habitat and range. Further research is needed to determine how the skipper responds to burn-severity patterns and potential interactions with effects of the 2002 drought.

Home Destruction

Jack Cohen was the team leader over the home destruction study.

An on-site assessment at each destroyed home principally provided the information needed to address these questions. In addition, documentation and photographs during the fire, post-fire aerial reconnaissance, and meetings and discussions with Federal and county personnel and local area residents contributed important information. Although we only specifically assessed the homes destroyed, surviving homes were considered. The site assessments occurred 3 months after the Hayman Fire at a time when much of the specific evidence describing the nature of home destruction and survival was lost. Discussions with fire personnel and residents indicate that most homes were not actively protected when the Hayman Fire burned the residential areas.

The Interim findings of the team include:

How many homes were destroyed out of the total number of homes within the Hayman Fire perimeter?

The Hayman Fire resulted in the destruction of 132 homes (i.e., homes on permanent foundations, modular homes, and mobile homes—both primary and secondary). Approximately 794 homes existed within what is now the final perimeter of the Hayman Fire. Thus, 662 homes were not destroyed. The Hayman Fire resulted in about 17 percent destruction of the total homes within the fire area.

What was the relative wildland fire intensity associated with the destroyed homes?

The wildland fire intensity associated with the destroyed homes varied as much as the fire intensity associated with homes that survived. Figure 4 shows the range of wildland fire intensities associated with homes destroyed and a similar range with those that survived.

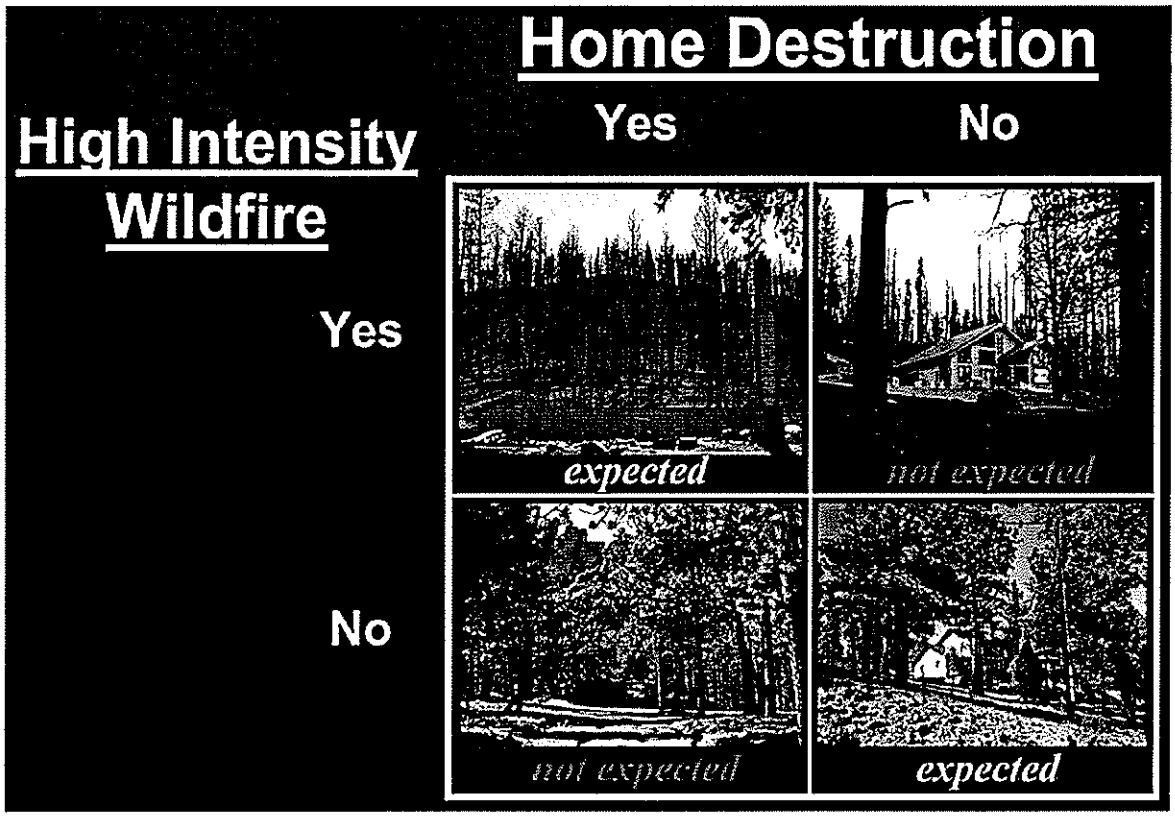

Figure 4—Each cell of the 2x2 matrix corresponds to home destruction associated with the nearby wildland fire intensity. Expectations correspond to fire intensities causing destruction, for example, home survival is expected if low fire intensities occur (lower right cell) and unexpected if the home is destroyed (lower left cell).

Research has shown that the characteristics of the home in relation to its immediate surroundings (within 30-60 meters) principally determine home ignitions during intense wildland fires. This area that includes the home characteristics and its immediate surroundings is called the *home ignition zone*. Figure 4 shows expected cases and unexpected cases based on an association of fire intensities and the resulting home destruction or survival. The home ignition zone provides the means for understanding the unexpected situations—homes destroyed associated with low fire intensity and surviving homes associated with high intensities. The wildland fire intensity in the general area does not necessarily cause home destruction or survival. This distinguishes the difference between the exposures (flames and firebrands) produced by the surrounding wildland fire from the actual potential for home destruction (home ignition zone) given those exposures. Recognizing that the home ignition zone principally determines home ignition potential provides an important context for interpreting the home destruction information. The home ignition zone implies that the issue of home destruction can be considered in a home site-specific context rather than in the general context of the Hayman Fire.

What is the categorical cause of the home destruction (i.e., crown fire or surface-firebrand) based on the consumption of the surrounding vegetation?

Seventy homes were destroyed in association with the occurrence of torching or crown fire at least in a portion of the area surrounding a home. Sixty-two homes were destroyed with no high intensity fire, torching or crown fire, in the area surrounding the home. The homes destroyed correspond to the two left cases in Figure 4. A destroyed home was counted in the high intensity fire category if any high intensity burning occurred in the area surrounding the home. Significant site disturbance in the time lapsed between the fire occurrence and our assessment prohibited any further analysis as to whether these high intensities could have directly caused home ignition. That is, loss of evidence and the limited time for assessment disallowed a post-burn analysis of the home ignition zone.

Did community covenants and/or county regulations exist that suggest differences in the potential for home destruction?

Significant patterns of destruction were not observed. This can likely be attributed to the wide variety of home types, designs and building materials, the scattering of destroyed homes, the significant number of surviving homes within the fire perimeter, and the wide range of fire intensities associated with home destruction. Associated with these findings, Teller, Park, and Douglas County did not have regulations related to reducing wildland-urban fire risks. Jefferson County required "defensible space" permits on the construction of habitable space greater than 400 ft^2 since 1996, but few—if any—homes fell into this category that occurred in the Hayman Fire area.

Post Fire Rehabilitation

Pete Robichaud led a team analyzing the post fire rehabilitation efforts. The team reviewed the existing knowledge and science on changes in watershed responses and effectiveness of post-fire rehabilitation treatments. They reviewed appropriate monitoring protocols and techniques related to erosion, water quality and treatment effectiveness that are appropriate for burn areas. Additional, they identified areas that can be used for comparing to natural recovery, and identified knowledge gaps.

The Interim findings of the team include:

- Sediment and water responses after wildfire is a function of aerial extent burn severity and the occurrence of rainfall events.
- Burned watersheds respond to rainfall faster producing flash floods that mobilize large amounts of bedload and suspended sediments. Water repellent soils and ground cover loss contribute to this response.
- Higher streamflows and velocities result in additional transport of solid and dissolved materials (ash and carbonaceous material) that can adversely affect water quality for human use and damage aquatic habitat.
- Channel incision and gully formation are important sources of sediment in the Colorado Front Range especially in Pike Peak granite area in which includes the Hayman Burn area.

- About half of the burn area drains into the Cheesman Reservoir and about 1/2 into the Strontia Springs Reservoir which are both owned and operated by the Denver Water Board.
- Various mitigation treatments were used to reduce erosion, reduce sediment into drinking water supplies, and protect roads. Treatments include aerial and ground-based hydromulch, aerial dry mulch and scarification with an added seed mix (rye grass) and armoring stream crossings.
- Some of the treatments recommended by postfire rehabilitation teams have not been systematically studied.
- Implementation monitoring ensures that post-fire rehabilitation treatments are implemented as planned and effectiveness monitoring determines if the treatment was effective especially compared to untreated areas. Monitoring efforts need to be expanded and results regularly reported.
- Knowledge gaps exists on mapping burn severity and water repellent soil conditions. Also predicting short-duration, high-intensity thunderstorm runoff responses, and sediment deposition and routing within drainages.

Social/ Economic

Brian Kent led the Social/Economic Team. The social/economic team addressed four general question areas as follows:

How do we begin to get a handle on the various costs (both during and after the fire) of the Hayman Fire?

How have stakeholder positions toward fuel treatments been influenced by the fire, i.e., what were they pre fire and during the fire, and what are they now?

What have individuals, organizations, and communities learned from the Hayman Fire experience?

How would we design and implement a long term social monitoring protocol community impacts and recovery/rehabilitation needs following the Hayman Fire?

The Interim findings of the team include:

- As of the end of September, expenditures that were entered into agency accounting systems totaled $28 million for fire suppression, and $13.3 million burned area emergency rehabilitation (BAER) work.

- Respondents in Woodland Park case study stated that the most positive impact resulting from the fire was the way the community (Woodland Park and the surrounding areas) "pulled together" and helped each other out.

- In terms of negative impacts, the negative impact on the economy of the area and

on individuals as well as the loss of natural resources, were mentioned often. The tourist sector was hit especially hard.

- The loss of the forest resources and physical beauty of the area were most often mentioned impact, positive or negative.

- Respondents generally attributed the fundamental causes to the drought and poor forest health or "lack of management".

- Most thought that the fire was inevitable and the ignition source itself was not important, saying that if the fire hadn't been started by an individual, something else such as lightning, a tossed cigarette, or a hot catalytic converter would have started it.

- Most respondent who *did not personally incur any damage* thought that the fire had been fought effectively and that it was not controllable.

- On the other hand, critical comments concerning the USFS were especially common among people who personally incurred property damage or lost a home.

- Locals appear to have generally good relationships with the Forest Service. Some mentioned that there had been some anger over the cause of the fire (i.e. its alleged ignition by a Forest Service employee), but nothing that appears to be long-lasting.

- One fairly persistent theme was the perceived need for the FS to improve its existing working relationships with volunteer firefighters and other groups/agencies involved in fire prevention and control.

- The fire experience has clearly increased awareness of wildfires and made a potential future fire more of a reality in peoples' minds.

- However, most respondents at the time of the interviews were not planning to take any particular actions to 'firesafe' their homes and properties against future events. Explanations for a lack of such activities range from "the damage has already been done" to the aesthetic preference for trees near their homes.

- Many respondents who lost their homes stated that they planned to rebuild their home again in the same spot.

- When they were asked whether they would put extra effort into fire prevention measures for their new house, many answered in the negative. The reason was that they loved to be surrounded by trees; therefore, thinning conflicted with their original purpose to build their house in such a setting.

- These stakeholders preferred any of three examples of forests treated by active management to the untreated (except for fire suppression) example.

- These stakeholders preferred any of six different fuel management strategies (various combinations of prescribed fire, mechanical removal and chemical spraying) including just chemical spraying to the option of doing nothing and letting the forest grow.

Hayman Fire Case Analysis: Team Members and Affiliations

Executive Committee

Marcia Patton-Mallory, Station Director, USDA Forest Service, Rocky Mountain Research Station (RMRS), Fort Collins, CO
Rick Cables, Regional Forester, USDA Forest Service, Rocky Mountain Region, Golden, CO
Jim Hubbard, Colorado State Forester, Colorado State Government, Denver, CO

Case Analysis Leader

Russell Graham, Research Forester, USDA Forest Service, Rocky Mountain Research Station (RMRS), Moscow, ID

Fire Behavior, Fuel Treatments, and Fire Suppression Team

Mark A. Finney, Team Leader, RMRS, Fire Sciences Laboratory, Missoula, MT
Roberta Bartlette, RMRS, Fire Sciences Laboratory, Missoula, MT
Larry Bradshaw, RMRS, Fire Sciences Laboratory, Missoula, MT
Kelly Close, Poudre Fire Authority, Fort Collins, CO
Brandon M. Collins, Graduate Student, Colorado State University, Fort Collins, CO
Paul Gleason, Department of Forestry and Natural Resources, Colorado State University, Fort Collins, CO
Mike Hessler, District Fire Manager, Pike-San Isabel National Forest, Pueblo, CO
Paul Langowski, USDA Forest Service, Rocky Mountain Region, Lakewood, CO
Charles W. McHugh, RMRS, Fire Sciences Laboratory, Missoula, MT
Erik J. Martinson, Department of Forestry and Natural Resources, Colorado State University, Fort Collins, CO
Ted Moore, Forest Fire Management Officer, Pike-San Isabel National Forest, Pueblo, CO
Phillip N. Omi, Department of Forestry and Natural Resources, Colorado State University, Fort Collins, CO
Wayne D. Shepperd, RMRS, Fort Collins, CO
Karl Zeller, RMRS, Fort Collins, CO

Ecological Effects Team

William H. Romme, Department of Forest Sciences, Colorado State University, Fort Collins, CO
Geneva Chong, U.S. Geological Survey and Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO
Jan E. Cipra, Department of Soil and Crop Sciences, Colorado State University, Fort Collins, CO
Catherine Crosier, Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO
Lynn M. Decker, USDA Forest Service, Washington Office
Laurie Huckaby, RMRS, Fort Collins, CO
Merrill R. Kaufmann, RMRS, Fort Collins, CO
Eugene F. Kelly, Department of Soil and Crop Sciences, Colorado State University, Fort Collins, CO
Jeffrey L. Kershner, USDA Forest Service, Washington Office, Logan, UT
Natasha B. Kotliar, U.S. Geological Survey, Fort Collins, CO
Lee MacDonald, Department of Forest Science, Colorado State University, Fort Collins, CO
Rebecca Parmenter, USDA Forest Service, Rocky Mountain Region, Denver, CO
Claudia M. Regan, USDA Forest Service, Rocky Mountain Region, Lakewood, CO
David A. Shadis, USDA Forest Service, Rocky Mountain Region, Lakewood, CO
Sara Simonson, Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO
Tom Stohlgren, U.S. Geological Survey and Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO
Dave Theobold, Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO
Thomas T. Veblen, Department of Geography, University of Colorado, Boulder
David Winters, USDA Forest Service, Rocky Mountain Region, Denver, CO

Home Destruction Team

Jack Cohen, Team Leader, RMRS, Fire Sciences Laboratory, Missoula, MT
Rick D. Stratton, Systems for Environmental Management, Missoula, MT

Postfire Rehabilitation Team

Pete Robichaud, Team Leader, RMRS, Forestry Sciences Laboratory, Moscow, ID
Jeff Freeouf, USDA Forest Service, Rocky Mountain Region
Lee MacDonald, Colorado State University
Deborah Martin, U.S. Geological Survey
Dan Neary, RMRS, Southwest Forest Science Complex, Flagstaff, AZ

Social/Economic Team

Brian Kent, Team Leader, RMRS, Natural Resources Research Center, Fort Collins, CO
Matt Carroll, Department of Natural Resources, Washington State University, Pullman WA
Patricia J. Cohn, Department of Natural Resources, Washington State University, Pullman WA
Carol Ekarius, Coalition for the Upper South Platte, Hartsell, CO
Krista Gebert, RMRS, Forestry Sciences Laboratory, Missoula, MT
John Hill, USDA Forest Service, Pike-San Isabel National Forest, Pueblo, CO
Yoshitaka Kumagai, Department of Natural Resources, Washington State University, Pullman WA
Wade Martin, Department of Economics, California State University, Long Beach, CA
Sarah McCaffrey, USDA Forest Service, North Central Station, Evanston, IL
Jim Raymond, Douglas Country, Castle Rock, CO
Mike Retzlaff, USDA Forest Service, Rocky Mountain Region, Lakewood, CO
Jason Stoker, RMRS, Natural Resources Research Center, Fort Collins, CO
Rocky Wiley, Denver Water Board, Denver, CO
Dan Williams, RMRS, Natural Resources Research Center, Fort Collins, CO

Communications Team

David Tippets, Team Leader, RMRS, Ogden, UT
Doug Young, Congressman Mark Udall's staff
Bill Rice, USDA Forest Service, Rocky Mountain Region, Lakewood, CO
John Bustos, Front Range Fuels Partnership
Katharine Timm, Colorado State Forest Service
Barbara Timock, Pike-San Isabel National Forest
Pam Gardner, USDA Forest Service, Rocky Mountain Region

Publications Team

Louise Kingsbury, Team Leader, RMRS, Team is stationed at Ogden, UT
Nancy Chadwick
Suzy Stephens
Lillie Thomas